

ENGINES AND TURBINES; FARM MACHINERY; CONSTRUCTION, MINING, AND OIL FIELD EQUIPMENT

This report shows the 1947 Census of Manufactures statistics for establishments primarily engaged in the production of steam engines and turbines, internal-combustion engines, tractors, agricultural machinery, construction, mining, and similar machinery, and oil-field machinery and tools. These establishments have been classified in six industries described separately below.

Steam Engines and Turbines (*Standard Industrial Classification No. 3511 and Part of 3614.*)—This industry comprises establishments primarily engaged in manufacturing steam engines, steam turbines, water wheels, water turbines, and turbo-generators. Establishments primarily engaged in building or rebuilding locomotives are classified in Industry 3741. According to the Standard Industrial Classification, turbo-generators are classified in Industry 3614, "Motors, Generators, and Motor-Generator Sets." However, the 1947 census includes turbo-generators (turbine-generator set units) in this industry since they are usually produced by establishments engaged in manufacturing steam turbines rather than those manufacturing generators. The reports for 1939 have been retabulated to include establishments engaged primarily in the production of turbo-generators. However, this was not done for earlier years.

This industry does not include steam engines and turbines produced and incorporated with blowers, pumps, etc., manufactured in the same establishments as the steam engines and turbines.

Most of the increase of 276 percent in production worker employment and 407 percent in the value of products for the industry from 1939 to 1947 reflects a change in the method of reporting between the two years. In 1939, data for some plants producing substantial quantities of steam engines and turbines were reported on a consolidated basis with other even larger operations of the same company and consequently were classified in other industries. In 1947, however, a separate report covering production of steam engines and turbines was obtained from establishments engaged in producing these products. While this resulted in an overstatement of the increase in table 1, the commodity figures in table 6-A are comparable.

In the steam engine and turbine industry, the total value of shipments in 1947 is not an accurate measure of productive activity during that year. For the large size turbines and turbine-generator sets, there is a long period of time, amounting to two or three years in some cases, between the input of material and labor and the completion of the turbines and turbine-generator sets. In a year such as 1947 when considerable work was performed on large turbines and turbine-generator sets but few were completed by the end of the year, this results in an understatement of the value added by manufacture (which is obtained by subtracting the cost of materials, supplies, containers, fuel, purchased electric energy, and contract work from the value of shipments). The approximate amount of understatement is indicated by the increase in inventories of materials, supplies, and work in process from the beginning of the year to the end of the year.

A few of the establishments engaged in manufacturing steam engines and turbines also installed the steam engines and turbines they produced. The establishments which included their installation costs in their reports also included

their receipts for installation in the value of products shipped. Such installation work accounts for approximately five percent of both total wages and salaries and total value of shipments for this industry. The employment statistics shown below include only the employees attached to the manufacturing establishment, and exclude local labor hired in the field for the installation or erection work.

Internal-Combustion Engines (*Full Standard Industrial Classification title and number: Diesel and Semi-Diesel Engines; and Other Internal-Combustion Engines, Not Elsewhere Classified, Industry 3519.*)—This industry comprises establishments primarily engaged in manufacturing Diesel or semi-Diesel engines, and other internal-combustion engines, not elsewhere classified, for stationary, marine, traction, or other uses. Establishments primarily engaged in manufacturing aircraft engines are classified in Industry 3722, and automobile engines in the "Motor vehicles and parts" industry.

The commodity statistics for internal-combustion engines are shown in tables 6-C through 6-H. These statistics represent total production of engines, including those made by companies for incorporation into their own end products such as tractors, ships, compressors, etc. Data for engines transferred to other establishments of the same company and for engines incorporated at the same establishment are combined. Commercial shipments are shown separately.

For engines produced and incorporated into final products made in the same establishment, the quantities shown represent production during 1947. Shipments were used as the measure for engines destined for sale or for transfer to other establishments of the same company.

In table 6-C only, data for automotive and aircraft engines are included to show total output of internal combustion engines. Information was not obtained on the horsepower and piston displacement of these engines since most of them were reported in total only on the report forms for the motor vehicle and aircraft industries. Therefore, automotive and aircraft engines are excluded from the tables on engines classified by horsepower and piston displacement. Omitted from all of the tables are motorcycle engines and rebuilt or reconditioned engines.

Tables 6-D and 6-E show data for internal-combustion engines (except automotive, aircraft, and outboard) by horsepower rating and by cubic inch piston displacement, respectively. Outboard motors have been excluded from these tables because of the special nature and use of such engines. Data for outboard motors by horsepower rating and by piston displacement are presented in table 6-F.

Separate data are shown for those Diesel engines operating at 750 revolutions per minute and less as distinct from Diesel engines operating at more than 750 r.p.m. These statistics are shown both by horsepower and by piston displacement in table 6-G.

In table 6-H, comparative data between 1939 and 1947 are presented on the number of internal-combustion engines by horsepower rating. The horsepower size groupings used in the 1939 census varied slightly from the 1947 groupings. The 1939 groups were "10 hp. and under 20," "20 hp. and under 50," etc., compared with "11.0-20.9 hp.," "21.0-50.9 hp.," etc., in 1947, the difference between the two groupings being in the upper and lower limits of the size intervals.

The data in table 6-H are shown in terms of the 1947 size groups and the 1939 figures for engines "10 hp. and under 20"

are shown on the line, "11.0-20.9 hp.," etc. Although the 1939 reports did not provide the data necessary for retabulation, i.e., separate figures on 10 hp. engines, 20 hp. engines, etc., there is no significant lack of comparability between the 1947 and 1939 size data.

Of the total value of \$617 million of internal-combustion engines (excluding automotive and aircraft), 21 percent was shipped by establishments classified in other industries. Establishments classified in the Internal-Combustion Engines Industry shipped \$489 million of internal-combustion engines (except automotive and aircraft) and \$170 million of other products such as automotive engines, industrial trucks, motors, etc.

Tractors (*Standard Industrial Classification No. 3521.*)—This industry comprises establishments primarily engaged in manufacturing wheel-type and track-laying tractors, and garden tractors. Establishments primarily engaged in manufacturing industrial trucks, tractors, and trailers used for handling materials in industrial plants, depots, and docks are classified in Industry 3565.

In 1939, industrial tractors were included in the Tractors Industry. The reports for 1939 have been retabulated on a basis comparable with 1947. Although the 1937 data have not been revised, the reclassification of industrial tractors does not significantly affect the comparability of the data for that year.

Figures on shipments of tractors, attachments and parts are collected on an annual basis by the Bureau of the Census on Form M37A. Table 6-A shows totals for the data collected on the annual survey for 1947 and in the Census of Manufactures for the same period. The differences are due to minor revisions in the reports from some establishments, the inclusion in the census of a few small establishments which were not canvassed in the annual survey, and the inclusion in the census, but not in the annual survey, of attachments and parts shipped to other plants producing tractors. The detailed figures by types and sizes of tractors shown in table 6-A are based on the annual survey for 1947.

Farm Machinery (Except Tractors) (*Full Standard Industrial Classification title and number: Agricultural Machinery (Except Tractors), Industry 3522.*)—This industry comprises establishments primarily engaged in manufacturing agricultural machinery and equipment (except tractors, Industry 3521) for use in the preparation or maintenance of the soil, planting and harvesting of the crop, preparing crops for market, or for use in performing other agricultural operations and processes. Establishments primarily engaged in manufacturing agricultural hand tools are classified in Group 342.

In 1939, establishments primarily engaged in the production of animal hair clippers, brooders, farm-milking machines, and barn and barnyard equipment were classified in industries other than farm machinery where they are classified in 1947. The reports for 1939 have been retabulated on a basis comparable with 1947. Although the 1937 data have not been revised, the reclassification of these items does not significantly affect the comparability of the data for that year.

Data on shipments of farm machines and equipment were collected during 1947 by the Bureau of the Census on Form M35A. The detailed statistics for the individual types of farm machines and equipment as shown in table 6-A are taken from this annual survey, revised on the basis of additional data received from some establishments in the Census of Manufactures. The census total value of shipments exceeds the annual survey total by approximately \$60 million, of which \$40 million represented parts and attachments shipped to other plants producing farm machines and equipment. The remaining \$20 million represents farm machines and equipment, not speci-

fied by type. The annual survey does not include parts and attachments shipped to other plants producing farm machines and equipment.

Construction and Mining Machinery (*Full Standard Industrial Classification title and number: Construction, Mining, and Similar Machinery (Except Oil-Field Machinery and Tools), Industry 3531.*)—This industry comprises establishments primarily engaged in manufacturing heavy machinery and equipment used by the construction and mining industries for portable or fixed-plant operation, in dredging, excavating, road and airport construction, ore and rock crushing, screening or washing, ore dressing or concentration. Establishments primarily engaged in manufacturing well-drilling machinery are classified in Industry 3532, and coal and ore conveyors in Industry 3563.

In 1939 and prior censuses, this industry as now constituted did not exist. Establishments primarily engaged in manufacturing construction and similar machinery were classified in 1939 in the industry "Construction and Other Similar Machinery (Except Mining and Oil-Field Machinery and Tools)," and those producing mining machinery and equipment in the industry "Mining Machinery and Equipment." Establishments primarily engaged in the production of overhead traveling cranes were classified in 1939 in the construction machinery industry but in 1947 they are classified in the industry for "Conveyors and Conveying Equipment." Establishments producing portable pneumatic tools were classified in 1939 in Industrial Machinery, Not Elsewhere Classified, but in 1947, in Construction and Mining Machinery. Reports for 1939 have been retabulated on a basis comparable with 1947. Data for earlier years, however, are not available.

For some of the products for which detailed statistics are shown in table 6-A, the Census of Manufactures report form requested only totals. The detailed statistics were obtained from a quarterly survey on construction machinery (excavating and earthmoving equipment only) conducted by the Bureau of the Census on Form M36A during 1947. These groups of products are angledozers and bulldozers for mounting on tractors; ditchers and trenchers; scrapers; graders; and rollers (self-propelled and drawn). For tractor-mounted cranes, cable power control units and loaders (shovel type), the same detail was collected in the Census of Manufactures as in the current survey. Revisions in the data originally submitted on the quarterly survey reports were received from some establishments in the Census of Manufactures. For certain additional establishments whose reporting in the current survey was incomplete, the data were obtained as part of the 1947 census canvass.

Of the total value of \$932 million of construction and mining machinery, 18 percent was shipped by establishments classified in other industries. Establishments classified in the Construction and Mining Machinery Industry shipped \$768 million of construction and mining machinery, and \$133 million of other products, such as overhead traveling cranes and monorail systems, conveyors and conveying equipment, etc.

Oil-Field Machinery and Tools (*Standard Industrial Classification No. 3532.*)—This industry comprises establishments primarily engaged in manufacturing machinery and tools for use in oil and gas fields, or for drilling water wells.

In 1939, water well machinery was classified in the industry for Industrial Machinery, Not Elsewhere Classified. The 1939 reports have been retabulated on a comparative basis with 1947. Data for earlier years, however, are not available. The 1939 commodity data on oil-field machinery and tools are not comparable with those collected for 1947. As a consequence, the 1939 figures are not shown in table 6-A.

TABLE 1.—GENERAL STATISTICS FOR THE UNITED STATES: 1947 AND EARLIER CENSUS YEARS

[Money figures in thousands of dollars. For explanation of column captions see GENERAL EXPLANATIONS]

INDUSTRY AND CENSUS YEAR	Number of establishments	All employees		Production and related workers		Value added by manufacture ¹	Cost of materials, fuel, electricity, and contract work	Value of products shipped ²
		Number (average for the year) ⁴	Salaries and wages, total ⁵	Number (average for the year)	Wages, total ⁷			
Steam engines and turbines:								
1947	17	21,640	\$71,972	15,375	\$49,584	\$80,947	\$48,974	\$129,921
1939 ³	20	n.a.	n.a.	4,094	6,594	15,782	9,866	25,648
1937 ³	22	n.a.	n.a.	4,102	7,614	15,413	7,012	22,425
Internal-combustion engines:								
1947	134	71,424	226,817	56,451	168,954	327,152	356,385	683,537
1939 ³	74	19,962	33,321	14,752	21,503	56,902	53,456	110,358
1937 ³	92	n.a.	n.a.	21,223	31,432	64,501	59,676	124,177
Tractors:								
1947	94	77,317	227,767	62,926	177,966	332,062	558,779	890,841
1939 ³	28	n.a.	n.a.	30,898	49,268	116,721	83,367	244,328
1937 ³	28	n.a.	n.a.	42,465	60,216	168,172	185,125	353,297
Farm machinery (except tractors):								
1947	1,008	94,118	266,858	76,703	203,608	421,700	466,938	888,638
1939 ³	393	n.a.	n.a.	29,246	36,594	94,237	83,367	177,604
1937 ³	270	n.a.	n.a.	37,773	55,751	117,032	108,012	225,044
Construction and mining machinery:								
1947	517	84,694	263,835	66,196	189,964	470,132	456,580	926,712
1939 ³	323	n.a.	n.a.	24,108	33,856	101,155	81,789	182,944
Oil-field machinery and tools:								
1947	230	29,177	91,532	22,709	65,083	171,265	117,588	288,853
1939 ³	239	n.a.	n.a.	12,642	18,940	58,101	31,451	89,552

n.a.—Not available.

¹ Value of products less cost of materials, supplies, fuel, electricity, and contract work. See GENERAL EXPLANATIONS—Value added by manufacture.

² For 1947, value of products shipped; for prior years, value of products made. See GENERAL EXPLANATIONS—Value of products shipped.

³ Revised. For lack of comparability between 1947 and 1939 data, see text on industry.

⁴ "Steam engines and turbines" and "Internal-combustion engines" were formerly included in the discontinued classification "Engines, turbines, water wheels, and wind-mills." Separate figures are, therefore, not available prior to 1937.

⁵ The returns for 1939, but not for 1937, have been retabulated to provide figures comparable with those for 1947. Value added for 1939, before retabulation and therefore on a basis comparable with 1937 was \$118.3 million for "Tractors," and \$88.6 million for "Farm machinery (except tractors)." No comparable figures are available prior to 1939 for "Construction and mining machinery" and "Oil-field machinery and tools."

⁷ "Tractors" and "Farm machinery (except tractors)" formerly constituted one industry. Separate figures are, therefore, not available prior to 1937.

TABLE 2.—GENERAL STATISTICS BY DIVISIONS AND STATES: 1947

[Money figures and man-hours in thousands. For explanation of column captions see GENERAL EXPLANATIONS]

INDUSTRY, DIVISION, AND STATE	Number of establishments	All employees		Production and related workers			Value added by manufacture	Cost of materials, fuel, electricity, and contract work	Value of products shipped	Expenditures for new plant and equipment
		Number (average for the year)	Salaries and wages, total	Number (average for the year)	Man-hours, total	Wages, total				
Steam engines and turbines, total¹	17	21,640	\$71,972	15,375	31,258	\$49,584	\$80,947	\$48,974	\$129,921	\$12,879
Northeast	12	18,636	63,229	13,435	27,089	43,821	73,804	44,475	118,279	(d)
Other Divisions	5	3,004	8,743	1,940	4,169	5,763	7,143	4,499	11,642	(d)
Internal-combustion engines, total¹	134	71,424	226,817	56,451	113,525	168,954	327,152	356,385	683,537	23,701
Northeast	28	10,844	32,210	8,462	18,104	23,962	54,330	34,577	88,907	(d)
Other Divisions	106	60,580	194,607	47,989	95,421	144,992	272,822	321,808	594,630	(d)
Ohio	12	6,832	22,812	5,228	10,379	15,760	36,952	40,403	77,355	1,789
Indiana	6	7,412	23,642	6,339	12,742	19,322	31,353	52,529	83,882	1,792
Illinois	11	10,230	32,471	7,489	14,919	22,412	35,458	50,065	85,523	8,915
Michigan	22	14,356	50,462	11,374	21,751	37,949	70,113	75,829	145,942	3,512
Tractors, total¹	94	77,317	227,767	62,926	125,699	177,966	332,062	558,779	890,841	64,017
Northeast	12	1,693	5,226	1,217	2,452	3,037	9,878	17,293	27,171	277
Pennsylvania	7	1,004	3,187	706	1,469	1,721	7,223	14,787	22,010	184
East North Central	44	58,041	172,235	47,198	94,507	135,093	266,696	434,323	701,019	33,881
Illinois	12	39,457	115,670	32,141	64,720	90,280	168,844	268,320	437,164	28,174
Wisconsin	12	13,109	40,683	10,339	21,110	31,728	67,264	92,916	160,180	3,933
West North Central	13	12,449	36,093	10,580	20,483	29,974	44,164	76,215	120,379	(d)
South	11	4,668	12,534	3,599	7,504	8,821	7,913	27,505	35,418	(d)
West	14	466	1,679	352	753	1,041	3,411	3,443	6,854	354
California	9	368	1,249	271	571	824	2,162	673	2,835	95
Farm machinery (except tractors), total¹	1,008	94,118	266,858	76,703	158,781	203,608	421,700	466,938	888,638	42,061
Northeast	120	13,894	41,250	11,327	23,211	31,450	68,521	63,165	131,686	5,392
Massachusetts	9	187	465	137	282	355	833	844	1,667	54
New Jersey	20	423	1,126	355	745	831	2,601	3,103	5,704	121
Pennsylvania	34	4,457	13,608	3,672	7,608	9,804	24,029	23,711	47,740	2,263
East North Central	320	54,111	156,273	43,735	90,281	119,163	226,474	270,717	507,191	20,474
Illinois	91	29,409	87,887	23,998	48,920	68,921	120,527	146,175	266,702	9,162
Wisconsin	64	6,479	17,661	4,884	10,979	12,311	30,103	32,608	62,711	1,773
West North Central	248	15,367	41,430	12,654	26,468	31,774	76,721	79,572	156,293	(d)
South	145	6,224	14,306	5,446	11,437	11,284	22,427	28,053	50,480	(d)
Virginia	12	311	544	279	601	443	1,020	902	1,922	49
North Carolina	19	672	1,320	595	1,285	1,024	2,505	2,170	4,675	110
Georgia	16	1,236	2,449	1,096	2,201	1,824	4,280	4,478	8,758	522
Florida	11	293	714	246	502	573	380	2,040	2,420	73
Kentucky	7	245	531	200	375	376	868	687	1,555	(d)
Tennessee	11	1,169	3,095	1,026	2,130	2,551	3,995	4,620	8,615	119
West	175	4,522	13,599	3,541	7,384	9,937	17,557	25,431	42,989	4,854
Idaho	7	235	686	174	366	495	893	794	1,687	87
California	110	3,276	9,939	2,577	5,329	7,330	12,270	19,295	31,565	4,280

See footnotes at end of table.

CENSUS OF MANUFACTURES: 1947

TABLE 2.—GENERAL STATISTICS BY DIVISIONS AND STATES: 1947—Continued

INDUSTRY, DIVISION, AND STATE	Number of establishments	All employees		Production and related workers			Value added by manufacture	Cost of materials, fuel, electricity, and contract work	Value of products shipped	Expenditures for new plant and equipment
		Number (average for the year)	Salaries and wages, total	Number (average for the year)	Man-hours, total	Wages, total				
Construction and mining machinery, total ¹	517	84,694	\$263,835	66,196	140,847	\$189,964	\$470,132	\$456,580	\$926,712	\$22,179
Northeast.....	115	15,491	48,947	12,175	26,791	35,898	87,179	77,600	164,839	2,978
New York.....	24	1,724	5,561	1,350	3,012	3,842	11,086	9,432	20,518	151
East North Central.....	191	48,436	154,180	37,587	80,554	110,584	275,387	276,167	551,554	(d)
Ohio.....	73	17,183	54,661	13,294	28,147	38,745	103,905	113,113	217,018	(d)
West North Central.....	64	8,768	24,023	6,915	14,087	17,754	49,100	45,421	94,521	(d)
Iowa.....	20	4,152	11,673	3,221	6,355	8,018	22,301	23,775	46,076	1,034
Missouri.....	13	492	1,551	363	809	953	2,078	2,576	5,554	200
Nebraska.....	6	208	666	183	432	502	958	1,323	2,281	101
South.....	50	5,095	13,951	4,111	8,730	10,090	20,722	22,193	42,915	1,494
West Virginia.....	7	945	2,913	1,569	1,569	1,935	4,322	4,134	8,456	213
Alabama.....	4	337	1,530	479	1,047	1,196	1,961	1,809	3,770	169
Texas.....	12	412	1,171	304	656	287	1,987	1,454	3,441	143
West.....	97	6,904	21,834	5,408	10,685	15,638	37,744	35,139	72,883	1,982
Colorado.....	16	1,747	4,792	1,372	2,748	3,432	9,403	7,536	16,939	415
Utah.....	4	397	1,277	274	663	772	1,968	3,282	5,250	157
California.....	52	2,655	8,707	2,074	4,136	6,147	15,232	14,393	20,625	1,064
Oil-field machinery and tools, total ¹	230	29,177	91,532	22,709	47,510	65,083	171,265	117,588	288,853	11,295
Northeast.....	19	2,247	6,236	1,940	3,863	5,138	8,766	11,523	20,289	688
East North Central.....	19	2,294	6,859	1,806	3,791	5,137	9,246	8,864	18,110	(d)
Ohio.....	15	2,224	6,662	1,746	3,660	4,986	8,905	8,632	17,537	(d)
West North Central.....	12	1,330	3,428	1,026	2,000	2,353	7,746	4,517	12,263	(d)
Missouri.....	5	401	1,118	309	582	771	3,106	1,676	4,782	88
South.....	120	17,968	56,910	13,931	29,427	39,876	106,451	71,066	177,517	6,056
West Virginia.....	8	701	1,845	575	1,251	1,411	3,741	3,479	7,220	90
Texas.....	76	13,446	43,131	10,330	21,837	30,089	78,419	48,327	128,746	4,905
West.....	60	5,338	18,099	4,006	8,429	12,579	39,056	21,618	60,674	2,072
California.....	56	5,305	17,996	3,978	8,371	12,401	38,770	21,366	60,136	2,058

^d Withheld to avoid disclosing figures for individual companies.

¹ For each producing State not shown separately in the table (see GENERAL EXPLANATIONS "Disclosure of Data for Individual Companies"), there are shown below the number of establishments and, in parentheses, the number of employees for States represented by three or more companies, when possible.

Steam engines and turbines: *Northeast*, Massachusetts, 4 (4,866); Connecticut, 2; New York, 1; Pennsylvania, 5 (8,370); *Other Divisions*, Wisconsin, 2; Iowa, 1; Texas, 1; California, 1.

Internal-combustion engines: *Northeast*, Vermont, 1; Massachusetts, 1; Connecticut, 4 (475); New York, 9 (3,474); New Jersey, 7; Pennsylvania, 6 (2,834); *Other Divisions*, Wisconsin, 23 (15,242); Minnesota, 3 (1,191); Iowa, 1; Missouri, 4 (1,193); Nebraska, 1; Kansas, 1; Oklahoma, 1; Texas, 1; Colorado, 1; Washington, 2; California, 17 (3,804).

Tractors: *Northeast*, Connecticut, 1; New York, 4; *East North Central*, Ohio, 9 (1,716); Indiana, 3 (203); Michigan, 8 (3,556); *West North Central*, Minnesota, 3 (2,632); Iowa, 4 (9,618); Missouri, 1; South Dakota, 1; Nebraska, 2; Kansas, 2; *South*, Maryland, 2; West Virginia, 3 (322); Kentucky, 2; Arkansas, 1; Louisiana, 1; Texas, 2; *West*, Colorado, 1; Washington, 2; Oregon, 2.

Farm machinery (except tractors): *Northeast*, Maine, 3; New Hampshire, 1; Vermont, 1; Connecticut, 4 (112); New York, 48 (8,678); *East North Central*, Ohio, 65 (5,056); Indiana, 50 (9,072); Michigan, 50 (4,095); *West North Central*, Minnesota, 62 (4,319); Iowa, 83 (7,441); Missouri, 22 (785); North Dakota, 9 (69); South Dakota, 4 (139); Nebraska, 33 (1,372); Kansas, 35 (1,242); *South*, Delaware, 1; Maryland, 3 (69); South Carolina, 2; Alabama, 7 (666); Mississippi, 7 (88); Arkansas, 1; Louisiana, 7 (337); Oklahoma, 10 (222); Texas, 31 (839); *West*, Montana, 4 (21); Wyoming, 2; Colorado, 18 (296); New Mexico, 3 (16); Arizona, 1; Utah, 2; Washington, 16 (404); Oregon, 12 (190).

Construction and mining machinery: *Northeast*, Maine, 4 (135); New Hampshire, 1; Massachusetts, 13 (294); Connecticut, 2; New Jersey, 22 (2,873); Pennsylvania, 49 (9,055); *East North Central*, Indiana, 18 (3,793); Illinois, 43 (9,613); Michigan, 20 (5,294); Wisconsin, 37 (12,553); *West North Central*, Minnesota, 17 (3,211); Kansas, 8 (705); *South*, Maryland, 2; Virginia, 2; North Carolina, 2; Georgia, 3 (954); Florida, 2; Kentucky, 1; Tennessee, 6 (512); Mississippi, 2; Louisiana, 3 (326); Oklahoma, 4 (284); *West*, Montana, 1; Idaho, 1; Washington, 17 (1,697); Oregon, 6.

Oil-field machinery and tools: *Northeast*, Connecticut, 1; New Jersey, 1; Pennsylvania, 17; *East North Central*, Indiana, 1; Illinois, 3; *West North Central*, Minnesota, 1; Kansas, 6; *South*, Mississippi, 1; Arkansas, 1; Louisiana, 3; Oklahoma, 31 (3,554); *West*, Wyoming, 1; Washington, 2; Oregon, 1.

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TABLE 3.—DETAILED STATISTICS FOR THE UNITED STATES: 1947
[Money figures in thousands of dollars. For explanation of line captions see GENERAL EXPLANATIONS]

ITEM	Industry					
	Steam engines and turbines	Internal-combustion engines	Tractors	Farm machinery (except tractors)	Construction and mining machinery	Oil-field machinery and tools
ALL ESTABLISHMENTS						
Number of establishments.....	17	134	94	1,008	517	230
All employees:						
Number (average for the year).....	21,640	71,424	77,317	94,118	84,604	29,177
Salaries and wages, total.....	\$71,972	\$226,817	\$227,767	\$266,858	\$263,835	\$91,532
Production and related workers:						
Number (average for the year).....	15,375	56,451	62,928	76,703	66,196	22,709
Man-hours, total..... thousands.....	31,258	113,525	125,699	158,781	140,696	47,510
Wages, total.....	\$49,584	\$168,954	\$177,966	\$203,608	\$189,904	\$65,083
Value added by manufacture.....	\$80,947	\$327,152	\$332,062	\$421,700	\$470,132	\$171,265
ESTABLISHMENTS REPORTING DETAILED STATISTICS						
Number of establishments.....	17	134	94	814	500	230
All employees:						
Number (average for the year).....	21,640	71,424	77,317	93,013	84,608	29,177
Salaries and wages, total.....	\$71,972	\$226,817	\$227,767	\$264,393	\$263,612	\$91,532
Production and related workers:						
Number (average for the year).....	15,375	56,451	62,928	75,667	66,120	22,709
Man-hours, total..... thousands.....	31,258	113,525	125,699	156,708	140,696	47,510
Wages, total.....	\$49,584	\$168,954	\$177,966	\$201,335	\$189,783	\$65,083
Value added by manufacture.....	\$80,947	\$327,152	\$332,062	\$417,138	\$469,795	\$171,265
Number of employees for pay period ended nearest Oct. 15:						
All employees.....	22,325	68,896	78,196	94,228	84,659	29,470
Male.....	20,176	60,576	70,642	85,569	78,179	27,298
Female.....	2,149	8,320	7,554	8,659	6,480	2,172
Production and related workers.....	16,136	54,251	63,643	76,258	66,064	22,694
Male.....	15,681	50,383	60,077	72,632	65,152	22,201
Female.....	455	3,868	3,566	3,426	912	493
Force-account construction workers.....		15	263	112	67	34
Administrative, supervisory, sales, and all other.....	6,189	14,630	14,290	17,858	18,528	6,442
Male.....	4,495	10,178	10,302	12,625	12,960	5,083
Female.....	1,694	4,452	3,988	5,233	5,568	1,479
All employees, number by month:						
January.....	21,557	74,170	71,550	87,444	83,645	28,971
February.....	21,182	74,914	72,341	89,665	84,593	28,984
March.....	21,243	73,343	73,098	91,081	84,657	29,241
April.....	20,805	72,804	75,016	92,990	84,955	29,450
May.....	21,097	71,996	76,760	93,657	84,867	29,299
June.....	21,422	71,871	78,364	95,550	85,102	29,744
July.....	21,128	71,079	79,613	94,313	84,600	29,824
August.....	21,915	69,994	78,697	93,264	84,315	29,895
September.....	22,041	69,490	80,253	93,235	83,354	29,189
October.....	22,325	68,896	78,196	94,228	84,659	29,470
November.....	22,271	68,578	81,347	93,774	84,848	29,452
December.....	22,720	69,910	82,514	96,433	86,870	29,476
Cost of materials, fuel, electricity, and contract work.....	\$48,974	\$356,385	\$558,779	\$461,994	\$456,275	\$117,588
Materials, parts, containers, and supplies.....	45,269	344,941	546,211	444,625	428,418	111,386
Fuels, total.....	2,969	4,704	5,585	6,111	4,658	1,426
Bituminous coal.....	892	1,658	1,858	2,310	1,910	224
Anthracite.....	6	30	4	68	104	21
Coke.....	14	615	1,703	1,178	1,005	184
Fuel oils.....	1,888	1,538	693	1,144	1,232	143
Gas.....	118	525	1,005	1,271	790	677
Other fuels.....	51	338	322	140	117	197
Purchased electric energy.....	636	2,729	3,727	3,699	5,297	1,885
Contract and commission work.....	100	4,011	3,256	7,559	17,902	2,891
Value of inventories:						
Beginning of year, total.....	\$41,804	\$155,199	\$174,414	\$220,001	\$220,334	\$76,045
Finished products.....	2,561	35,386	44,969	55,153	48,699	34,438
Materials, supplies, and work in process.....	39,243	119,813	129,445	164,848	171,635	41,607
End of year, total.....	62,931	167,622	213,589	259,552	268,195	83,688
Finished products.....	3,145	38,828	61,761	72,189	68,289	39,272
Materials, supplies, and work in process.....	59,786	128,794	151,828	187,363	209,906	44,416
Expenditures for plant and equipment:						
New plant and equipment.....	\$12,879	\$23,701	\$64,017	\$42,061	\$22,179	\$11,295
Construction and major alteration of fixed plants.....	8,060	6,736	22,915	16,613	8,148	3,949
Buildings.....	7,311	6,250	22,116	15,705	7,447	3,624
Other construction.....	749	486	799	910	701	325
Machinery and equipment.....	4,819	16,965	41,102	25,448	14,031	7,346
Production machinery and equipment.....	4,549	15,676	39,104	22,820	11,401	6,671
Other machinery and equipment.....	270	1,289	1,998	2,628	2,630	1,776
Used plant and equipment, and land.....	413	7,997	6,425	6,458	6,346	1,291
Number of highway-type motor vehicles owned or leased:						
Trucks.....	46	237	202	996	814	582
By manufacturer's rated capacity:						
Under 1½ tons.....	11	78	75	447	338	326
1½ tons.....	20	87	61	333	270	176
Over 1½ tons and less than 3½ tons.....	4	46	43	174	118	58
3½ tons and less than 5 tons.....	2	8	12	30	42	17
5 tons and over.....	5	18	11	12	46	6
By body type:						
Van.....	1	3	4	20	19	7
Stake or platform.....	25	129	98	527	408	180
Panel or light delivery.....	10	69	59	294	260	195
All other trucks.....	10	46	41	155	137	200
Truck tractors.....	4	11	16	130	60	36
Trailers and semitrailers.....	13	17	15	143	67	63

CENSUS OF MANUFACTURES: 1947

TABLE 4.—SELECTED GENERAL STATISTICS BY SIZE OF ESTABLISHMENT, FOR THE UNITED STATES, 1947

[Money figures in thousands of dollars. For explanation of line captions see GENERAL EXPLANATIONS. Data which cannot be shown without disclosing information for individual companies have been combined with figures for other groups. A ^d appears in the column where the figure has been omitted and the combined figure is printed in italics]

INDUSTRY AND ITEM	Total, all establish- ments	Establishments with an average of—									
		1-4 em- ployees	5-9 em- ployees	10-19 em- ployees	20-49 em- ployees	50-99 em- ployees	100-249 em- ployees	250-499 em- ployees	500-999 em- ployees	1,000- 2,499 employees	2,500 employees and over
Steam engines and turbines:											
Number of establishments.....	17	1	-----	1	1	-----	7	-----	2	1	4
Number of employees (average for the year).....	21,640	(^d)	-----	(^d)	(^d)	-----	1,252	-----	20,588	(^d)	(^d)
Value added by manufacture.....	\$80,947	(^d)	-----	(^d)	(^d)	-----	\$7,512	-----	\$73,636	(^d)	(^d)
Internal-combustion engines:											
Number of establishments.....	134	18	14	10	10	15	16	15	11	18	7
Number of employees (average for the year).....	71,424	49	88	130	209	1,140	2,674	5,628	7,654	28,049	25,713
Value added by manufacture.....	\$327,152	\$228	\$371	\$420	\$2,144	\$4,703	\$12,354	\$25,328	\$33,008	\$146,751	\$101,785
Tractors:											
Number of establishments.....	94	12	13	14	14	9	6	7	3	6	10
Number of employees (average for the year).....	77,317	23	88	202	470	646	783	2,227	2,454	9,423	61,001
Value added by manufacture.....	\$332,062	\$134	\$446	\$857	\$2,913	\$4,977	\$4,365	\$15,845	\$8,468	\$40,978	\$253,079
Farm machinery (except tractors):											
Number of establishments.....	1,008	225	189	173	170	92	85	38	16	16	4
Number of employees (average for the year).....	94,118	505	1,230	2,388	5,136	6,623	14,082	12,965	11,494	59,695	(^d)
Value added by manufacture.....	\$421,700	\$2,077	\$6,163	\$10,313	\$25,314	\$33,257	\$70,721	\$54,233	\$58,192	\$101,430	(^d)
Construction and mining machinery:											
Number of establishments.....	517	63	47	69	106	73	77	39	23	18	2
Number of employees (average for the year).....	84,694	151	330	972	3,543	5,111	11,864	13,578	17,411	51,734	(^d)
Value added by manufacture.....	\$470,132	\$715	\$1,505	\$5,838	\$10,600	\$31,734	\$62,803	\$67,215	\$101,491	\$179,231	(^d)
Oil-field machinery and tools:											
Number of establishments.....	230	30	33	34	53	19	36	13	7	4	1
Number of employees (average for the year).....	29,177	70	232	467	1,666	1,324	6,126	4,366	4,471	10,455	(^d)
Value added by manufacture.....	\$171,265	\$389	\$1,036	\$2,716	\$9,644	\$9,110	\$38,531	\$30,242	\$26,024	\$53,564	(^d)

TABLE 5.—VALUE OF PRODUCTS SHIPPED, BY BROAD CLASSES OF PRODUCTS, FOR THE UNITED STATES, 1947

[The first column shows the total value of shipments of the specified industry, divided among: (A) products classified in (primary to) the industry, (B) products classified in other industries (secondary to the specified industry), and (C) miscellaneous receipts. The second column shows the value of shipments of the primary products of the specified industry reported by establishments in other industries. The third column shows the total value of shipments of the primary products of the specified industry by all reporting manufacturers]

[Money figures in thousands of dollars]

STEAM ENGINES AND TURBINES INDUSTRY	Shipped by—			INTERNAL-COMBUSTION ENGINES INDUSTRY	Shipped by—		
	Steam engines and turbines industry	Other industries	All industries		Internal- combustion engines industry	Other industries	All industries
Total shipments by the industry.....	\$129,921	-----	-----	Total shipments by the industry.....	\$683,537	-----	-----
A. Steam engines and turbines and hy- draulic turbines.....	92,174	\$28,853	\$119,027	A. Internal-combustion engines (except automotive and aircraft).....	1 480,269	1 \$127,088	1 \$617,257
Steam engines and turbines and hy- draulic turbines.....	36,341	15,507	51,848	Gasoline and other carburetor en- gines (except outboard motors).....	178,709	36,902	165,663
Steam and water (hydraulic) tur- bine generator-set units.....	55,833	11,346	67,179	Outboard motors.....	144,299	38,027	182,326
B. Secondary products (nonferrous cast- ings, blowers and fans, power transmission equipment, motors, generators, etc.).....	19,660	-----	-----	Diesel and semi-Diesel engines.....	21,255	2,610	18,662
C. Miscellaneous receipts.....	18,087	-----	-----	Gas engines.....	421	727	5,772
Contract and commission work.....	1,296	-----	-----	Other internal-combustion engines.....	144,405	49,722	194,217
Repair work.....	15,959	-----	-----	Engines not reported by type.....	170,268	-----	-----
Other receipts.....	832	-----	-----	Parts and accessories for internal- combustion engines.....	80,314	-----	-----
				B. Secondary products.....	89,954	-----	-----
				Automotive engines.....	24,000	-----	-----
				Other secondary products.....	2,855	-----	-----
				C. Miscellaneous receipts.....	7,170	-----	-----
				Contract and commission work.....	3,195	-----	-----
				Repair work.....	8,105	-----	-----
				Scrap and salable refuse.....	10,780	-----	-----
				Nonmanufacturing activities.....	-----	-----	-----

¹ These data include the value of engines transferred to other establishments of the same company. Transfers to other establishments of the same company are not shown separately in tables 6-D, 6-E, and 6-G, but are combined with engines produced for incorporation into other products made in the same establishment.

TABLE 5.—VALUE OF PRODUCTS SHIPPED, BY BROAD CLASSES OF PRODUCTS, FOR THE UNITED STATES: 1947
—Continued

TRACTORS INDUSTRY	Shipped by—			CONSTRUCTION AND MINING MACHINERY INDUSTRY	Shipped by—		
	Tractors industry	Other industries	All industries		Construction and mining machinery industry	Other industries	All industries
Total shipments by the industry	\$890,841			Total shipments by the industry	\$926,712		
A. Tractors.....	736,314	\$46,210	\$782,524	A. Construction and mining machinery.....	768,167	\$164,263	\$932,430
Wheel-type.....	454,692	28,353	483,045	Crane, hoists, winches, and derricks.....	76,443	32,368	108,811
Track-laying.....	224,632		224,632	Excavating and road-construction and maintenance machinery.....	365,281	51,267	416,548
Garden.....	41,635	5,326	46,961	Mixers, pavers, and related equipment.....	52,171	4,580	56,751
Tractors, not specified by type.....	15,355	12,531	27,886	Specialized mining machinery and equipment.....	33,440	7,022	40,462
B. Secondary products.....	149,024			Crushing, pulverizing, and screening machinery.....	43,245	13,095	56,340
Plows and listers.....	2,543			Other construction and mining machinery.....	197,587	55,931	253,518
Planting, seeding, and fertilizing machines.....	2,500			B. Secondary products.....	132,933		
Internal-combustion engines.....	62,692			Overhead traveling cranes and monorail systems.....	9,953		
Other secondary products (gray-iron castings, construction machinery, other farm equipment).....	81,289			Other conveyors and conveying equipment.....	6,086		
C. Miscellaneous receipts.....	5,503			Fabricated structural steel, for sale to other companies.....	5,146		
Scrap and salable refuse.....	4,112			Truck and bus bodies.....	2,083		
Other receipts.....	1,391			Other secondary products (machine tools, ornamental metal work, etc.).....	109,065		
				C. Miscellaneous receipts.....	25,612		
				Contract and commission work.....	4,186		
				Repair work.....	17,451		
				Scrap and salable refuse.....	2,815		
				Nonmanufacturing activities.....	1,160		

FARM MACHINERY (EXCEPT TRACTORS) INDUSTRY	Shipped by—			OIL-FIELD MACHINERY AND TOOLS INDUSTRY	Shipped by—		
	Farm machinery (except tractors) industry	Other industries	All industries		Oil-field machinery and tools industry	Other industries	All industries
Total shipments by the industry	\$888,638			Total shipments by the industry	\$288,853		
A. Farm machinery (except tractors).....	779,291	\$64,960	\$844,251	A. Oil-field machinery and tools.....	240,228	\$22,711	\$262,939
Plows and listers.....	80,382	3,147	83,529	B. Secondary products.....	34,280		
Harrows, rollers, stalk cutters, etc.....	54,713	2,710	57,423	Valves and fittings for piping systems, except plumbing and heating valves.....	2,284		
Planting, seeding, and fertilizing machinery.....	68,061	5,016	73,077	Other secondary products (pumps and compressors, boiler shop products, construction machinery, etc.).....	31,996		
Sprayers and dusters.....	35,272	4,284	39,556	C. Miscellaneous receipts.....	14,345		
Harvesting machinery.....	190,561	1,009	191,570	Contract and commission work.....	1,838		
Haying machinery.....	93,247	1,618	94,865	Repair work.....	7,621		
Farm dairy machines and equipment.....	26,579	4,836	31,415	Scrap and salable refuse.....	1,648		
Lawn mowers.....	64,503	6,550	71,053	Nonmanufacturing activities.....	3,238		
Other farm machines and equipment.....	165,073	35,790	200,863				
B. Secondary products.....	97,070						
Transportation equipment, n.e.c.....	7,691						
Conveyors and conveying equipment.....	5,448						
Mechanical stokers.....	1,674						
Other secondary products.....	82,257						
C. Miscellaneous receipts.....	12,277						
Contract and commission work.....	5,083						
Repair work.....	2,954						
Scrap and salable refuse.....	2,709						
Nonmanufacturing activities.....	1,531						

TABLE 6-A.—QUANTITY AND VALUE OF PRODUCTS, TOTALS FOR THE UNITED STATES: 1947 AND 1939
[Money figures in thousands of dollars]

PRODUCT	1947			1939		
	Total shipments and interplant transfers			Total production for sale and interplant transfer		
	Quantity (number of units)	Total rated horsepower capacity	Value f.o.b. plant	Quantity (number of units)	Total rated horsepower capacity	Value f.o.b. plant
Steam engines and turbines and hydraulic turbines			\$51,848			n.a.
Steam engines (reciprocating).....	260	110,874	2,183	308	117,365	\$1,155
Steam turbines:						
Marine (including Navy):						
Mechanical drive steam turbines.....	40	232,905	2,261	122	702,760	8,369
Steam turbine-gear units.....	48	265,745	4,167			
Other:						
Mechanical drive steam turbines.....	3,474	375,875	6,012	2,271	517,795	7,070
Steam turbine-gear units.....	799	135,662	3,282	112	836,663	5,885
Hydraulic turbines.....	158	1,599,158	10,740			
Parts for steam engines and turbines and hydraulic turbines (sold separately).....			23,203			n.a.
Steam and water (hydraulic) turbine generator-set units			67,179			
Steam turbine generator-set units.....	789	n.a.	66,399			(*)
Water (hydraulic) turbine generator-set units and other equipment, including parts, etc.....			780			

See footnotes at end of table.

TABLE 6-A.—QUANTITY AND VALUE OF PRODUCTS, TOTALS FOR THE UNITED STATES: 1947 AND 1939—Continued

PRODUCT	1947		1939	
	Total shipments and interplant transfers		Total production for sale and interplant transfer	
	Quantity (number of units)	Value f.o.b. plant	Quantity (number of units)	Value f.o.b. plant
Internal-combustion engines (except automotive and aircraft) ⁶		\$617,257		\$107,421
Gasoline and other carburetor engines, except outboard		165,663		31,216
Outboard motors		50,038		8,562
Diesel and semi-Diesel engines		182,326		46,527
Gas engines		18,092		4,761
Other internal-combustion engines		5,773		
Internal-combustion engines, not reported by type		1,148		761
Parts and accessories for internal-combustion engines		194,217		16,604
Wheel-type tractors ⁶		483,045		(⁷)
Total reported on annual Census Bureau report M37A		475,086		(⁷)
Complete tractors	428,005	549,835	185,568	110,856
All purpose	360,067	278,861	168,586	90,333
8 and under 15 belt hp.	13,020	5,796		
15 and under 20 belt hp.	98,003	64,808	149,195	83,076
20 and under 25 belt hp.	163,590	119,464		
25 and under 30 belt hp.	25,022	24,460		
30 and under 35 belt hp.	58,711	65,673	0,390	7,257
35 and under 45 belt hp.	5,911	8,060		
Other	62,008	70,474	20,073	20,523
8 and under 20 belt hp.	3,819	2,446		
20 and under 25 belt hp.	12,697	9,765	11,248	6,713
25 and under 35 belt hp.	15,981	16,802		
35 and under 45 belt hp.	24,985	34,695	16,725	13,810
45 belt hp. and over	6,196	7,867		
Attachments		32,598		(⁷)
Parts		93,353		(⁷)
Track-laying type tractors		224,632		(⁷)
Total reported on annual Census Bureau report M37A		225,256		(⁷)
Complete tractors	37,534	134,530	20,127	45,305
Under 25-34 drawbar hp.	12,011	20,608		
35-49 drawbar hp.	9,597	27,912	13,284	10,240
50-59 drawbar hp.	7,214	29,924		
70-94 drawbar hp.	5,373	29,458	6,843	26,056
95 and over drawbar hp.	3,339	26,428		
Attachments		7,405		(⁷)
Parts		88,461		(⁷)
Garden tractors (including motor tillers)		46,961		(⁷)
Total reported on annual Census Bureau report M37A		45,931		(⁷)
Complete tractors	172,252	55,151	9,777	1,416
Garden tractors, except motor tillers	140,959	22,628		
Under 3 engine hp.	110,103	14,962		
3 and under 8 engine hp.	30,856	7,666	9,777	1,416
Motor tillers, under 10 engine hp.	31,293	10,523		
Attachments		9,650		(⁷)
Parts		1,130		
Tractors, not specified by type; and parts and attachments shipped to other plants producing tractors		\$ 27,886		
Plows and listers ⁶		83,529		n.a.
Moldboard plows:				
Horse drawn:				
Walking:				
Steel bottom	114,201	1,013	100,538	1,298
Chilled bottom	83,231	939		266
Sulky type and gang type, 2-bottom and larger	1,082	164	4,260	
Tractor drawn, 1-way:				
1-bottom	38,356	833	24,445	1,423
2-bottom	67,259	6,578	68,437	5,241
3-bottom	22,247	2,683	8,859	974
4-bottom	4,555	907	1,836	312
5-bottom and larger	2,467	620	881	197
Tractor drawn, 2-way	5,505	773	(¹⁰)	(¹⁰)
Mounted, 1-way:				
1-bottom	20,733	1,240	n.a.	n.a.
2-bottom and larger	70,302	6,342	n.a.	n.a.
Mounted, 2-way, 2 bottom	11,145	1,258	n.a.	n.a.
Disc plows, drawn:				
1-disc	968	48	940	52
2-disc	2,082	328	3,378	343
3-disc	2,104	424	1,736	258
4-disc	1,803	464	784	168
5-disc	1,272	380	491	136
6-disc and larger	1,120	486	474	148
Disc plows, mounted:				
1-disc and 2-disc	21,784	2,481	n.a.	n.a.
3-disc and larger	11,129	2,242	n.a.	n.a.
One-way disc plows or tillers:				
Width of cut, under 5 feet	8,667	1,259	10,320	1,727
Width of cut, 5 feet and larger	17,548	0,037		
Ditching plows	4,727	630	n.a.	(¹¹)
Terracers	21,297	2,441	n.a.	(¹¹)
Other plows	30,709	10,123	n.a.	547
Plowstocks	66,925	207	47,036	89
Listers, without planting attachments:				
Drawn	11,500	103	16,316	733
Mounted:				
1-row	2,444	88	n.a.	n.a.
2-row	12,508	985	n.a.	n.a.
3-row and larger	3,529	431	n.a.	n.a.
Plowshares (quantity in thousand pounds)	50,293	8,169	20,534	2,011
Attachments for plows and listers		7,417		6,500
Parts for plows and listers, except plowshares		15,346		

See footnotes at end of table.

TABLE 6-A.—QUANTITY AND VALUE OF PRODUCTS, TOTALS FOR THE UNITED STATES: 1947 AND 1939—Continued

PRODUCT	1947		1939	
	Total shipments and interplant transfers		Total production for sale and interplant transfer	
	Quantity (number of units)	Value f.o.b. plant	Quantity (number of units)	Value f.o.b. plant
Harrows, rollers, pulverizers, and stalk cutters *		\$57,423		n.a.
Harrows:				
Spike-tooth harrow sections	355,916	4,857	141,288	\$1,116
Spring-tooth harrow sections	112,177	1,737		853
Spring-tooth harrows (heavy duty)	12,816	405	78,106	
Disc harrows, field type:				
Drawn	180,339	21,114		
Mounted	38,334	4,158	91,375	6,841
Disc harrows, heavy duty, brush, and bog type	28,686	5,424		
Other harrows	1,654	163	n.a.	202
Smooth land rollers, not including lawn rollers	624	66	n.a.	n.a.
Soil pulverizers and packers	26,658	2,694	11,057	617
Ridge busters	198	32	n.a.	n.a.
Stalk cutters:				
1-row	6,571	381		
2-row and larger	17,472	1,352	5,436	193
Land levelers or scrapers (farm size)	40,967	4,594		
Bulldozers, under 5 feet blade length	4,038	395	n.a.	n.a.
Other rollers, pulverizers, and similar equipment	4,178	360		
Attachments		1,591		2,663
Parts		8,100		
Planting, seeding, and fertilizing machinery *		73,977		n.a.
Corn planters:				
Drawn:				
1-row	13,113	245	16,243	258
2-row	28,433	2,608	29,664	1,734
3-row and larger	6,751	1,380	1,704	236
Mounted	12,881	1,330	(12)	(12)
Corn and cotton planters:				
Drawn:				
1-row	21,637	463	33,532	538
2-row and larger	4,403	295	6,000	403
Mounted:				
1-row	5,869	232		
2-row	15,331	1,161	2,704	61
3-row and larger	1,005	165		
Listers with planting attachments:				
Drawn	4,666	762		
Mounted	13,555	1,436	3,316	258
Potato planters, drawn or mounted:				
1-row	1,320	180		
2-row and larger	3,236	958	2,942	323
Beet and bean drills	3,127	672	776	84
Garden or vegetable planters:				
Hand, wheel type	51,442	300	51,945	215
Drawn or mounted	25,179	508	n.a.	n.a.
Transplanters, drawn or mounted:				
1-row	4,616	533		
2-row and 3-row	1,408	439	1,932	171
Grain drills, including legume planters:				
1-horse, plain or fertilizer	3,510	95		
Other than 1-horse:				
Fertilizer	24,015	5,448	26,458	3,376
Plain	22,711	5,007		
Broadcast seeders:				
Hand type	156,352	234	89,296	118
End-gate and drawn	15,053	431	11,249	197
Fertilizer distributors:				
Manually operated	45,311	244	n.a.	n.a.
Drawn or mounted	100,524	3,618	38,334	477
Lime spreaders:				
Wheel-type, drawn	23,877	1,881	6,103	237
End-gate and truck body	4,029	1,681	1,269	29
Trailer	14,707	718	n.a.	n.a.
Manure spreaders:				
2-wheel	40,158	7,299	34,291	4,189
4-wheel	21,064	3,928		
Other planting, seeding, and fertilizing machinery	65,795	12,879	n.a.	n.a.
Loaders, except hay		549		668
Attachments		6,586		2,352
Parts		9,712		

See footnotes at end of table.

TABLE 6-A.—QUANTITY AND VALUE OF PRODUCTS, TOTALS FOR THE UNITED STATES: 1947 AND 1939—Continued

PRODUCT	1947		1939	
	Total shipments and interplant transfers		Total production for sale and interplant transfer	
	Quantity (number of units)	Value f.o.b. plant	Quantity (number of units)	Value f.o.b. plant
Cultivators and weeders¹		\$50,363		n.a.
Corn and cotton type cultivators:				
Horse-drawn:	90,063	613	85,208	\$715
1-horse:				
Walking, 1-row:	6,098	368	17,484	536
Riding, 1-row:	1,141	62	17,316	671
2-horse:	32,636	3,228	n.a.	n.a.
Tractor-drawn:				
Mounted:	28,552	1,150		
1-row:	167,650	16,444	70,652	6,107
2-row:	6,729	1,443		
4-row and larger:				
Beet, bean, vegetable, and garden cultivators, drawn or mounted:	7,138	427	2,093	179
Rotary hoes and cultivators, drawn or mounted:	30,701	2,274	3,480	207
Chisel, orchard, and subsoil cultivators and tillers, drawn or mounted:	6,725	2,180	n.a.	n.a.
Field cultivators, drawn or mounted:	34,339	3,531	6,994	791
Hand cultivators, wheel-type:	545,477	1,991	210,857	380
Weeders, drawn or mounted, except flame:				
Rod:	5,908	593	4,151	109
Toothed:	32,359	1,004		899
12,767:		794		
Other cultivators and weeders:		5,850		
Attachments:		8,411		2,493
Parts:				
Sprayers and dusters²		39,556		n.a.
Power sprayers:				
Orchard and tree:				
Engine powered:	15,139	3,378		
Under 6 gallons per minute:	10,571	9,081		
6 gallons per minute and over:	3,505	2,258		
Tractor power take-off:			8,045	1,964
Field or row-crop:	2,029	1,629		
Engine powered:	2,034	1,124		
Tractor power take-off:	2,808	100		
Traction sprayers, horse or tractor drawn:				
Hand sprayers:				
Under 32 ounces:	14,243,164	3,320		
32 ounces and under 1 gallon:	4,528,514	2,223		
1 gallon and over:			n.a.	n.a.
Compressed air:	743,734	3,468		
Knapsack:	20,437	219		
Wheelbarrow and cart:	26,196	461		
Flame sprayers, hand:	87,090	1,230	n.a.	n.a.
Spray-pumps:				
Power driven:	5,854	1,192	2,221	301
Hand driven:	53,994	385	n.a.	n.a.
Dusters:				
Orchard and tree:				
Engine powered:	1,884	704		
Tractor power take-off:	3,216	423		
Field or row-crop:			1,795	250
Engine powered:	2,452	557		
Tractor power take-off:	6,901	1,031		
Traction:	5,203	453	1,575	97
Hand type:				
Crank or knapsack:	75,802	844		
Plunger:	977,194	618	132,320	223
Attachments:		569		
Parts:		4,183		651
Harvesting machinery³		191,570		n.a.
Combines (harvester-threshers):				
Pull type:				
6 ft. and under:	59,331	44,130	26,519	12,052
Over 6 ft. and under 12 ft:	3,135	3,551		
12 ft. and larger:	9,040	15,913	8,530	9,292
Self-propelled:	5,394	12,235		
Grain bladders, including rice binders:	9,393	2,805	17,105	3,169
Windrowers or swathers:	4,111	1,348	n.a.	n.a.
Corn pickers:				
Drawn:				
1-row:	35,248	16,924		
2-row:	7,788	6,636	13,878	6,554
Mounted or semimounted:	24,126	12,940		
Potato diggers:				
Walking plow type:	288	5	936	12
Drawn:				
1-row:	3,989	954		
2-row:	1,864	759	2,250	376
Potato harvesters:	1,136	606	n.a.	n.a.
Beet lifters:	2,572	279	1,652	90
Beet harvesters:	1,595	2,053	n.a.	n.a.
Beet loaders:	1,012	585	n.a.	n.a.
Peanut diggers:	3,193	195	n.a.	n.a.
Pea and bean cutters or pullers:	292	36	956	91
Forage harvesters (field and row type), including hay choppers:	15,596	11,195	440	240
Other harvesting machinery:	17,241	7,797		2,030
Attachments:		10,883		
Parts:		39,741		10,309

See footnotes at end of table.

TABLE 6-A.—QUANTITY AND VALUE OF PRODUCTS, TOTALS FOR THE UNITED STATES: 1947 AND 1939—Continued

PRODUCT	1947		1939	
	Total shipments and interplant transfers		Total production for sale and interplant transfer	
	Quantity (number of units)	Value f.o.b. plant	Quantity (number of units)	Value f.o.b. plant
Haying machinery ¹		\$94,865		n.a.
Mowers:				
Drawn	53,244	5,598	84,270	\$5,903
Mounted or semimounted	140,959	15,384	n.a.	n.a.
Rakes:				
Sulky (dump)	34,135	1,919	28,104	916
Side delivery (including combination side rakes and tedders)	59,480	7,447	18,248	1,588
Sweep or buck (horse or tractor drawn)	21,333	1,315	5,479	302
Loose hay loaders	16,597	2,436	15,625	1,544
Hay stackers (stationary and combination)	7,854	1,630	1,368	142
Pick-up hay balers:				
Wire	6,439	6,385		
Twine	20,495	26,685	410	477
Stationary hay and straw balers	6,749	2,251	4,326	1,256
Other haying machinery		1,457		235
Attachments		3,525		4,744
Parts		18,833		
Machines for preparing crops for market or for use ¹		42,013		n.a.
Stationary threshers:				
Grain, rice, and alfalfa:				
Under 28-inch cylinder	1,083	973	1,505	1,223
28-inch cylinder and larger	346	379	1,922	1,920
Pea and bean	97	130	276	66
Peanut pickers and threshers	2,277	1,400	633	324
Corn shellers:				
Hand	50,048	202	51,400	224
Power (cylinder):				
150 bushels per hour and under	17,461	1,136		
Over 150 bushels per hour	8,038	1,687	7,792	897
Ensilage cutters (silo fillers)	12,957	4,069	9,516	2,014
Corn huskers and combination corn husker-shredders	1,503	882	1,757	771
Feed cutters (hand or power)	1,000	70	1,280	38
Feed grinders and crushers:				
Hand	8,661	40	27,811	70
Power:				
Hammermills and combination roughage mills (farm size)	89,144	11,021	42,901	4,419
Burr mills (farm size)	11,626	599	8,288	303
Feed mixers (farm size)	51,747	2,053	n.a.	n.a.
Maple syrup pans, except furnaces	835	165	n.a.	91
Maple syrup furnaces	425	72	287	36
Grain and corn graders and cleaners (farm size)	19,289	942	3,325	436
Potato sorters and graders (farm size)	1,822	477	1,604	131
Vegetable graders and washers (farm size)	551	304	n.a.	n.a.
Cane mills (farm size)	2,582	303	2,104	124
Tobacco curers	27,322	2,803	n.a.	n.a.
Other machines for preparing crops for market or for use		2,909		1,189
Attachments		3,066		5,443
Parts		6,331		
Barnyard equipment ¹		8,808		n.a.
Animal stock tanks	141,215	2,581	97,343	1,259
Livestock outside watering bowls	3,698	45	6,571	64
Hog waterers	108,938	1,637	n.a.	n.a.
Livestock water heaters	59,568	942	n.a.	n.a.
Livestock feeders	67,767	2,021	72,356	790
Other barnyard equipment		1,398		(12)
Attachments		69		(13)
Parts		117		
Farm poultry equipment ¹		20,602		n.a.
Incubators:				
1,000 egg capacity and smaller (quantity represents total egg capacity)	1,352,135	127	2,018,646	191
1,001 through 19,999 egg capacity (quantity represents total egg capacity)	12,690,462	1,637		2,526
20,000 egg capacity and larger (quantity represents total egg capacity)	22,308,980	2,106	28,998,803	
Brooders:				
Floor:				
Electric	130,086	2,110	91,741	1,002
Oil	148,475	1,721	133,967	1,188
Coal	23,666	446	42,529	470
Gas	31,009	632	3,806	47
Wood	2,004	38	n.a.	n.a.
Battery:				
1-2 deck	51,956	437	1,318	17
3 deck	3,896	100	1,959	49
4 deck	939	101	1,152	76
5 deck and larger	14,336	1,548	7,125	614
Growing batteries	15,989	604	9,775	294
Laying batteries	72,688	117	7,686	184
Nests, hens', trap and laying	192,308	1,050	n.a.	n.a.
Poultry feeders:				
Chick	2,952,624	830		1,024
Intermediate type	1,164,907	1,015	3,376,389	
Flock and pullet	668,965	1,289		
Poultry waterers:				
Under 1 gallon capacity	1,780,174	168	4,513,681	984
1 gallon capacity and larger	1,519,262	2,157		n.a.
Leg and wing bands (quantity represents thousands of units)	90,642	275	n.a.	1,114
Other farm poultry equipment		649		
Attachments		183		131
Parts		1,262		

See footnotes at end of table.

TABLE 6-A.—QUANTITY AND VALUE OF PRODUCTS, TOTALS FOR THE UNITED STATES: 1947 AND 1939—Continued

PRODUCT	1947		1939	
	Total shipments and interplant transfers		Total production for sale and interplant transfer	
	Quantity (number of units)	Value f.o.b. plant	Quantity (number of units)	Value f.o.b. plant
Farm dairy machines and equipment ⁹		\$31,415		\$10,387
Mechanical milking equipment:				
Stationary pumping outfits, excluding milker units	75,124	5,467		
Portable milker outfits, complete with self-contained power unit:				
Single milker	5,644	791		
Double milker	5,533	634	24,492	1,537
Milker units for stationary pumping outfits:				
Single units	147,827	7,682		
Double units	8,405	474		
Cream separators:				
Hand or power operated:				
250 pounds or less per hour, including bench type	24,198	536		
251 through 500 pounds per hour	28,060	1,412	38,350	896
501 through 800 pounds per hour	38,449	4,015	26,173	1,585
801 through 1,500 pounds per hour	12,100	1,401		
Butter churns, farm size	323,183	991	n.a.	281
Other farm dairy machines and equipment		1,252		4,577
Attachments		331		1,511
Parts		6,420		
Barn equipment ⁹		11,803		n.a.
Feed carriers (overhead)	225	7		
Litter carriers	10,495	473	3,610	109
Track for hay carriers (quantity in thousands of feet)	2,007	495	n.a.	n.a.
Track for feed and litter carrier systems (quantity in thousands of feet)	920	217	1,680	291
Feed trucks	7,510	363	992	21
Litter carrier tub trucks	1,459	58	n.a.	n.a.
Hay carriers	56,227	817	38,147	331
Hay forks (harpoon and grapple):				
Loose tine	71,905	676		
Rigid tine	12,025	90	30,479	153
Hay pulleys, sold separately	370,400	353	n.a.	n.a.
Hay slings:				
Rope or chain	38,149	64		
Slat	1,582	8	21,479	38
Cattle stalls shipped with stanchions	200,419	2,268		
Cattle stalls shipped without stanchions	53,811	386	95,643	622
Stanchions shipped separately	541,085	1,654	280,834	747
Livestock pens (quantity in thousands of feet)	129	400	n.a.	130
Livestock water bowls, inside	550,325	1,715	200,742	439
Other barn equipment		858		1,476
Attachments		146		49
Parts		755		
Lawn mowers		71,053		9,804
Hand (reel type)	2,200,126	30,365	1,271,804	6,524
Power, total	362,339	30,523	34,576	3,280
Reel type	242,098	24,632		
Hand traction	30,232	2,074		
Power traction	211,866	22,558		
Rotary type	120,241	11,891	n.a.	n.a.
Hand traction	100,937	9,140		
Power traction	19,304	2,751		
Gang (cutting units)	21,230	2,162		
Other ¹⁴	20,889	2,003		
Other farm machines and equipment (including windmills) and parts and attachments shipped to other plants producing farm equipment ¹⁵		67,274		n.a.
Cranes (except construction power, and overhead traveling cranes), hoists, winches, and derricks (except oil- and gas-well derricks)		108,811		13,278
Cranes (except construction power cranes):				
Locomotive, except wrecking	322	10,292		
Full circle revolving with booms (such as whirleys and hammer heads)	211	7,423	n.a.	4,396
Pillar, jib, and bracket cranes	n.a.	428		
Other cranes, including locomotive wrecking	4,229	9,367		
Hoists:				
Hand chain hoists	259,758	10,701		
Electric chain hoists	30,401	5,048		
Electric wire-rope hoists	21,715	14,056	n.a.	8,612
Air hoists	n.a.	1,462		
Other hoists	n.a.	24,791		
Winches	n.a.	18,584		
Derricks, except oil- and gas-well	n.a.	3,708	n.a.	270
Cranes, hoists, winches, and derricks, not reported by kind		2,951		
Excavating and road construction and maintenance machinery		416,548		n.a.
Power cranes, draglines, and shovels (including mine shovels and draglines): ¹⁶				
Crawler mounted: ¹⁷				
Under 1/2 cu. yd. shovel capacity (or up to and including 5 tons crane lifting capacity)	783	4,826		
1/2 cu. yd. shovel capacity (or over 5 to 7 tons crane lifting capacity)	3,103	20,723		
3/4 cu. yd. shovel capacity (or over 7 to 10 tons crane lifting capacity)	3,175	42,861		
1-1/2 cu. yd. shovel capacity (or over 10 to 25 tons crane lifting capacity)	639	15,746		
1 3/4-2 cu. yd. shovel capacity (or over 25 to 40 tons crane lifting capacity)	449	17,629		
2 1/2 cu. yd. shovel capacity (or over 40 to 50 tons crane lifting capacity)	422	21,379		
Over 2 1/2 cu. yd. shovel capacity (or over 50 tons crane lifting capacity)	186	22,993	3,036	35,879
Truck or wheel (wagon) mounted: ¹⁷				
Under 3/4 cu. yd. shovel capacity (or up to and including 10 tons crane lifting capacity)	2,155	21,179		
3/4 cu. yd. and over shovel capacity (or over 10 tons crane lifting capacity)	469	11,316		
Walking draglines and walking cranes; and power cranes, draglines, and shovels, not reported by type ¹⁷	n.a.	3,452		
Front end attachments, buckets, grapples, slings, etc., for power cranes, draglines, and shovels, sold separately, and parts for power cranes, draglines, and shovels	n.a.	56,881	n.a.	¹⁸ 5,490

See footnotes at end of table.

TABLE 6-A.—QUANTITY AND VALUE OF PRODUCTS, TOTALS FOR THE UNITED STATES: 1947 AND 1939—Continued

PRODUCT	1947		1939	
	Total shipments and interplant transfers		Total production for sale and interplant transfer	
	Quantity (number of units)	Value f.o.b. plant	Quantity (number of units)	Value f.o.b. plant
Excavating and road construction and maintenance machinery—Continued				
Construction machinery for mounting on tractors (track-laying or heavy duty wheel-type):				
Tractor-mounted cranes	1,994	\$2,842	n.a.	(19)
Dozers (angle and bull) for mounting on tractors (five feet blade length and over)	17,657	20,975	5,047	\$4,242
Cable type	5,601	6,508	n.a.	n.a.
Hydraulic type	11,966	14,467	n.a.	n.a.
Cable power control units	10,008	6,909	n.a.	(19)
Loaders, shovel type	6,955	9,766	n.a.	(19)
Earth augers and post-hole diggers	n.a.	2,271	n.a.	(19)
Dredging machinery	n.a.	8,006	n.a.	3,141
Ditchers and trenchers	1,052	8,572	n.a.	1,908
Ladder type	216	2,496		
Wheel and blade type	732	5,375	n.a.	n.a.
Not specified by kind	104	701		
Scrapers		25,678	n.a.	8,098
Carrying and hauling scrapers	6,573	24,328	n.a.	n.a.
Other and not specified by kind		1,350		
Contractor's air tools, hand held (clay diggers, paving breakers, and back-fill tampers)	13,709	2,477		(19)
Graders	n.a.	45,586	n.a.	7,613
Motor, heavy	4,561	30,271		
Motor, light and medium	3,556	10,400		
Pull type and elevating	722	614	n.a.	n.a.
All other types	1,027	762		
Not specified by kind	n.a.	3,539		
Rollers	4,233	12,108		
Tandem, self-propelled	1,639	4,822		
Three-wheeled, self-propelled	1,060	5,200	n.a.	(19)
Pneumatic, drawn	498	528		
Tamping and sheepsfoot	520	912		
Portable, self-propelled	516	646		
Snow plows:				
Rotary and blower	70	484		
"V" and single blades and wings (attachments only)	n.a.	4,768	n.a.	2,318
Brooms:				
Power-driven	685	309		
Traction driven	202	114		
Sweepers, motor pick-up	544	1,217		(19)
Other excavating and road construction machinery (including rippers and rooters, discs, conveyor type loaders, etc.)	n.a.	16,481		
Mixers, pavers, and related equipment		56,751		n.a.
Concrete:				
Mixer, portable, under 3 1/2 cu. ft. capacity (except plaster and mortar):				
Hand operated	22,665	1,612		
Power operated	8,079	1,682	n.a.	6,468
Mixer, portable, 3 1/2 cu. ft. and over (except plaster and mortar)	19,525	24,546		
Mixer, plaster and mortar	4,593	1,862		
Pavers	89	1,774		
Finishers and spreaders	292	1,164		
Batching plants (for concrete, aggregate only, and bulk cement)	1,205	4,989		
Concrete vibrators	3,254	1,265		
Bituminous:				
Portable mixers and patch plants	255	967		(19)
Distributors:				
Truck mounted	586	2,216		
Trailer type:				
Up to and including 800 gallons capacity (maintenance units)	585	614		
Over 800 gallons capacity	74	345		
Asphalt plants (including travel-mix type)	129	5,238		
Kettles, bituminous heating	4,702	1,546		
Heaters and circulators, tank car, direct and steam heating	496	1,367	n.a.	194
Other and unspecified mixers, pavers, and related equipment		5,564		
Specialized mining machinery and equipment		40,462		
Coal cutting machines (used for coal and other soft minerals)	1,533	11,844		(19)
Underground loaders:				
Mobile loading machines (including shovel and gathering types)	637	8,579		
All other underground loaders (including scraper)	1,604	4,810		
Mineral classifying, flotation, separating, concentrating, cleaning, sedimentation, clarifying, and related equipment (except screening machinery and plants)		5,750		
Underground mine cars (including shuttle cars and car dumpers)	17,523	8,910	n.a.	3,688
Specialized mining machinery and equipment, not reported by kind		569		
Crushing, pulverizing, and screening machinery (including equipment for ore, coal, rock, and the processing industries, but excluding small equipment built specifically for grinding feed on farms)		56,340		n.a.
Crushers and crushing plants:				
Portable	1,435	16,985		
Stationary (including crushers on skids)	858	10,284	n.a.	10,432
Pulverizers and grinders	1,119	9,307		
Screening plants, washing plants, and combination washing and screening plants (including combination crushing, washing, and screening plants):				
Portable		1,896		
Stationary		14,862		(19)
Crushing, pulverizing, and screening machinery, not reported by kind		3,006		
Other construction and mining machinery (except oil-field machinery and tools; cranes, other than power; hoists; winches; and derricks)		253,518		n.a.
Drills (other than water well, blast hole, and oil and gas field):				
Portable rock drills, hand held or mounted	33,951	11,459		(19)
Core drills, complete	1,168	3,260		
Other drills, and tools and supplies for drills sold separately		14,147		(19)
All other construction and mining machinery and equipment, complete units		78,266		
Parts and attachments for construction and mining machinery and equipment sold separately (except parts and attachments for power cranes, draglines, and shovels)		140,891		\$15,731
Construction and mining machinery, not reported by kind		5,505		

See footnotes at end of table.

TABLE 6-A.—QUANTITY AND VALUE OF PRODUCTS, TOTALS FOR THE UNITED STATES: 1947 AND 1939—Continued

PRODUCT	1947		1939	
	Total shipments and interplant transfers		Total production for sale and interplant transfer	
	Quantity (number of units)	Value f.o.b. plant	Quantity (number of units)	Value f.o.b. plant
Oil-field machinery and tools		\$262,939		\$84,153
Portable drilling rigs, permanently mounted on truck or trailer: ²¹				
Oil and gas field:				
Cable tool.....	649	4,831		
Rotary rigs.....	297	9,585		
Water well and blast hole:				
Cable tool.....	1,529	6,895		
Rotary rigs.....	162	2,275		
Oil and gas field drilling equipment, except portable (other than pumps):				
Cable tool drilling surface machinery and equipment:				
Drilling machines and accessories ²²	503	5,407		
Other cable tool surface drilling equipment (including rig irons, wheels, reels, beams, pitmans, etc.).....		1,850		
Cable tool drilling subsurface equipment:				
Drilling bits, jars, sockets.....		7,020		
Fishing and specialty tools.....		1,490		
Other cable tool subsurface equipment.....		583		
Rotary drilling surface machinery and equipment:				
Blocks, crown and traveling.....		1,916		
Draw works and accessories ²²	410	10,860		
Rotary tables.....	650	2,491		
Elevators, spiders, slips, hooks, links, and connectors.....		4,367		
Swivels and accessories.....		2,171		
Well-control equipment (blow-out preventers, etc.).....		7,384		
Other rotary drilling surface machinery and equipment (including consolidated rigs and accessories).....		13,414		
Rotary drilling subsurface equipment:				
Bits.....		44,650		
Reamers.....		1,781		
Coring equipment.....		7,493		
Tool joints, subs, and connectors.....		14,541		
Drill collars.....		6,352		
Kelly joints.....	1,124	959		
Fishing and cutting tools.....		2,482		
Other subsurface rotary drilling equipment.....		912		
Cementing, floating, guiding, and shoe equipment:				
Guide shoes, float collars, and combination guide and float shoes.....		2,232		
Other cementing equipment.....		7,125		
Derrieks, substructures and accessories—regular and portable, including equipment shipped "knocked down" and assembled on the site.....		9,809		
Well surveying machinery and equipment.....		3,527		
Production machinery and equipment:				
Flowing well equipment, surface and subsurface:				
Christmas tree assemblies.....		5,251		
Casing and tubing head supports.....		4,210		
Chokes, manifolds, and other accessories.....		608		
Rodless oil lifting machinery and equipment (other than pumps).....		557		
Rod lifting machinery and equipment, surface (including pumps when they are components of a complete assembly):				
Pumping units and accessories, including back crank equipment ²²	14,113	23,292		
Pumping jacks.....		169		
Other surface rod lifting machinery and equipment.....		434		
Rod lifting equipment subsurface, except pumps:				
Sucker, pull and polish rod equipment ²²	1,799,938	11,037		
Other subsurface rod lifting equipment.....		173		
Other production machinery and equipment:				
Packers.....		2,997		
Screens, tubing catchers, etc.....		1,357		
Oil and gas separating, metering and treating equipment.....		6,963		
Oil-field machinery and tools, not specified by type.....		21,471		

n.a.—Not available.

¹ More detailed statistics for steam engines and turbines are shown in table 6-B.² Represents a revision of the previously published 1939 census figures.³ Includes value of gears.⁴ Data not available separately; these statistics were included in the "Motors, generators, and motor-generator sets" industry.⁵ More detailed statistics for internal-combustion engines are shown in tables 6-C to 6-H.⁶ Excludes special types of heavy-duty industrial tractors, which are included in the construction and mining machinery industry.⁷ In 1939, no separate data were collected for parts and attachments by type of tractor. The value of production for parts and attachments for all types of tractors was \$45,999,000.⁸ Over two-thirds of this value represents parts and attachments shipped to other plants producing tractors.⁹ The 1939 data for these commodities, which are taken from the annual survey "Farm machines and equipment," represent manufacturers' sales rather than production as is the case for other 1939 comparative data. In 1939, as in other years, manufacturers' sales, factory production, and factory shipments do not differ significantly for farm equipment items.¹⁰ In 1939, data for tractor drawn 2-way moldboard plows were included with the 1-way plows.¹¹ In 1939, data for ditching plows and terracers were included with "other plows."¹² In 1939, data for mounted corn planters were included with drawn corn planters.¹³ In 1939, other barnyard equipment and parts and attachments for barnyard equipment were included with data for barn equipment.¹⁴ Includes sickle-bar lawn mowers shipped as complete units, lawn edgers, rotary type hand mowers, and special cutting units. Sickle-bar attachments for garden tractors are not included.¹⁵ Over two-thirds of this value represents parts and attachments shipped to other plants producing farm machines and equipment.¹⁶ Excludes equipment for mounting on tractors.¹⁷ Includes value of front end attachments when sold with the machine.¹⁸ Includes parts and attachments for power shovels only. Parts for power cranes and draglines are included with "Parts and attachments for construction, mining machinery and equipment sold separately."¹⁹ Not available separately for 1939. Included with "All other construction and mining machinery and equipment," valued at \$57,120,000.²⁰ Includes rebuilt machinery, parts for power cranes and draglines and parts for overhead traveling cranes and monorail systems.²¹ Portable drilling rigs have been classified as "oil and gas field" or "water well and blast hole" depending on the purpose for which they were built, regardless of the use to which they may have been put by the purchaser.²² Quantity includes only number of drilling machines, draw works, pumping units, and sucker rods, respectively. However, the value includes accessories, etc., shipped with the complete units as well as accessories, etc., shipped separately.²³ Comparable detailed data for 1939 are not available.

TABLE 6-B.—STEAM ENGINES AND TURBINES, BY TYPE AND HORSEPOWER RATING: 1947 AND 1939
[Money figures in thousands of dollars]

PRODUCT	1947						1939			
	Steam engines (reciprocating)	Steam turbines				Hydraulic turbines	Steam engines (reciprocating)	Steam turbines		Hydraulic turbines
		Marine (including Navy)		Other than Marine				Marine (including Navy)	Other than Marine	
		Mechanical drive turbines	Turbine-gear units	Mechanical drive turbines	Turbine-gear units					
Total number of units.....	260	40	48	3,474	799	158	1 308	122	2,271	112
By horsepower capacity (rated or normal):										
0-9 hp.....	140	16	24	729	79	23	19		327	4
10-19 hp.....				493	48		38		460	3
20-49 hp.....				841	128		70	10	600	14
50-99 hp.....				577	130		29	4	373	10
100-199 hp.....				391	190		19	40	217	9
200-499 hp.....	18			280	172	23	44	20	228	35
500-999 hp.....	76			101	36	12				
1,000-4,999 hp.....	26				16	34		1 76	2	48
5,000-9,999 hp.....		24	24	62		10	46			
10,000-24,999 hp.....						12				
25,000-34,999 hp.....						15				18
35,000 and over.....										
Total rated horsepower capacity.....	110,874	232,905	265,745	375,875	135,662	1,599,158	117,365	702,760	517,795	836,663
Value f.o.b. plant.....	\$2,183	\$2,261	\$4,167	\$6,012	\$3,282	\$10,740	\$1,155	\$8,369	\$7,070	\$5,885

¹ Represents a revision of the previously published 1939 census figures.
² Includes value of gears.

TABLE 6-C.—INTERNAL-COMBUSTION ENGINES (INCLUDING AUTOMOTIVE AND AIRCRAFT), NUMBER PRODUCED: 1947

PRODUCT	Total number of engines produced	PRODUCT	Total number of engines produced
Gasoline and other carburetor	8,510,486	Diesel and semi-Diesel.....	115,363
Automotive (automobile, truck, and bus).....	5,766,578	Automotive (automobile, truck, and bus).....	15,180
Aircraft.....	18,934	All other.....	100,183
Outboard.....	584,468	Gas.....	3,622
All other.....	2,140,516	Other.....	55,944

¹ Includes kerosene and distillate engines.
² Conventional type only.
³ Consists entirely of carbon dioxide model aircraft engines of special design and dual fuel type engines such as gasoline-kerosene, gasoline-gas, Diesel-gas, etc.

TABLE 6-D.—INTERNAL-COMBUSTION ENGINES (EXCEPT AUTOMOTIVE, AIRCRAFT, AND OUTBOARD), QUANTITY AND VALUE BY HORSEPOWER RATING: 1947
[Money figures in thousands of dollars]

PRODUCT	Total (number of units)	Shipments to other companies		Production for in- corporation into prod- ucts of the same com- pany (in- cluding transfers to other plants of the company) Quantity (number of units)	PRODUCT	Total (number of units)	Shipments to other companies		Production for in- corporation into prod- ucts of the same com- pany (in- cluding transfers to other plants of the company) Quantity (number of units)	
		Quantity (number of units)	Value f.o.b. plant				Quantity (number of units)	Value f.o.b. plant		
Gasoline and other carburetor engines.....	2,140,516	1,595,332	\$154,118	545,184	Diesel and semi-Diesel engines.....	100,183	63,053	\$156,969	37,125	
1.9 hp. and under.....	526,364	490,976	13,245	35,388	5.9 hp. and under.....	14,822	1,966	533	891	
2.0-2.9 hp.....	487,710	461,232	21,117	26,478	6.0-10.9 hp.....		5,078	2,712		
3.0-4.9 hp.....	205,210	157,995	11,934	47,215	11.0-20.9 hp.....		2,961	2,073		
5.0-5.9 hp.....	56,561	38,341	2,732	18,220	21.0-30.9 hp.....		3,926	3,621		
6.0-6.9 hp.....	39,423	8,962	749	30,461	31.0-40.9 hp.....	12,675	3,044	3,110	8,537	
7.0-8.9 hp.....	43,040	42,034	2,988	1,006	41.0-50.9 hp.....	21,378	1,094	1,304		
9.0-10.9 hp.....	48,314	34,477	4,479	13,837	51.0-70.9 hp.....		10,741	11,440	10,637	
11.0-20.9 hp.....	144,918	90,419	13,501	54,499	71.0-100.9 hp.....		21,772	12,656	18,171	9,116
21.0-30.9 hp.....	230,332	94,028	16,432	136,304	101.0-150.9 hp.....		18,598	13,496	32,051	5,102
31.0-35.9 hp.....	30,117	22,332	5,105	7,785	151.0-200.9 hp.....	6,028	5,014	17,893	1,014	
36.0-40.9 hp.....	149,077	14,022	3,022	135,055	201.0-300.9 hp.....	2,048	1,269	9,311	67	
41.0-45.9 hp.....		21,850	6,189	11,521	301.0-400.9 hp.....		712	6,248		
46.0-50.9 hp.....		3,596	1,217		401.0-500.9 hp.....		300	7,357		
51.0-60.9 hp.....		33,147	8,863	12,960	501.0-600.9 hp.....		136	4,895		
61.0-70.9 hp.....	26,887	22,058	5,749	4,829	601.0-700.9 hp.....	473	65	2,454	242	
71.0-80.9 hp.....	27,176	9,785	3,818	2,952	701.0-800.9 hp.....	79	166	5,065	596	
81.0-90.9 hp.....		14,439	5,336		801.0-900.9 hp.....		79	5,447		
91.0-100.9 hp.....		8,411	4,120		901.0-1000.9 hp.....		666	70		3,823
101.0-150.9 hp.....		24,606	15,246		1,355		1001.0-1500.9 hp.....	185		9,940
151.0-200.9 hp.....		1,765	2,633		1501.0 hp. and over.....	1,173	100	9,521	888	
201.0-400.9 hp.....	2,879	662	1,784	257	Other engines (including gas).....	59,566	56,783	23,510	2,783	
401.0 hp. and over.....		195	3,859		20.9 hp. and under.....	53,712	53,712	3,053		
					21.0-50.9 hp.....	2,992	903	745	2,089	
					51.0-150.9 hp.....		1,039	1,334		
					151.0-200.9 hp.....	2,862	207	724	694	
					201.0 hp. and over.....		922	17,654		

CENSUS OF MANUFACTURES: 1947

TABLE 6-E.—INTERNAL-COMBUSTION ENGINES (EXCEPT AUTOMOTIVE, AIRCRAFT, AND OUTBOARD), QUANTITY AND VALUE, BY PISTON DISPLACEMENT: 1947

(Money figures in thousands of dollars)

PRODUCT	Total (number of units)	Shipments to other companies		Production for in- corporation into prod- ucts of the same com- pany (in- cluding transfers to other plants of the company)	PRODUCT	Total (number of units)	Shipments to other companies		Production for in- corporation into prod- ucts of the same com- pany (in- cluding transfers to other plants of the company)
		Quantity (number of units)	Value f.o.b. plant				Quantity (number of units)	Value f.o.b. plant	
Gasoline and other carburetor engines	2,140,516	1,595,332	\$154,118	545,184	Diesel and semi-Diesel engines	100,183	63,058	\$156,969	37,125
3.9 cu. in. and under	32,095	32,095	1,021	37,499	16.0-50.9 cu. in.	8,391	5,317	2,305	717
4.0-5.9 cu. in.	491,487	453,983	13,853	12,123	51.0-100.9 cu. in.	10,193	2,357	1,472	1,183
6.0-8.9 cu. in.	408,900	396,777	15,064	82,334	101.0-150.9 cu. in.	17,444	6,412	5,281	8,120
9.0-10.9 cu. in.					151.0-200.9 cu. in.		2,598	1,923	
11.0-15.9 cu. in.	256,298	117,171	7,236	17,860	201.0-250.9 cu. in.		9,324	9,711	
16.0-20.9 cu. in.		56,793	4,899	15,478	251.0-300.9 cu. in.	7,685	5,760	8,314	1,925
21.0-25.9 cu. in.	147,664	129,804	10,355	1,235	301.0-400.9 cu. in.	27,938	5,294	6,642	13,588
26.0-30.9 cu. in.				25,645	401.0-500.9 cu. in.		9,056	15,370	
31.0-40.9 cu. in.	30,996	15,518	2,070	10,282	501.0-600.9 cu. in.		1,272	2,492	
41.0-50.9 cu. in.	30,659	29,424	3,491	161,509	601.0-800.9 cu. in.	17,185	5,060	11,097	7,344
51.0-75.9 cu. in.	65,034	39,389	5,142	46,784	801.0-1000.9 cu. in.		3,509	11,313	
76.0-100.9 cu. in.	66,606	56,324	8,733	42,161	1001.0-1500.9 cu. in.	7,022	3,629	13,399	2,680
101.0-150.9 cu. in.	251,125	89,616	15,474	7,443	1501.0-2000.9 cu. in.		1,313	8,237	
151.0-175.9 cu. in.	80,197	33,413	7,168	41,819	2001.0-3000.9 cu. in.	1,066	595	4,422	44
176.0-200.9 cu. in.	48,859	6,708	1,865	23,707	3001.0-5000.9 cu. in.		427	6,063	
201.0-225.9 cu. in.	37,047	29,604	7,988	11,527	5001.0-10,000.9 cu. in.	1,865	414	10,875	1,451
226.0-300.9 cu. in.	103,688	61,869	18,673		10,001.0-15,000.9 cu. in.	589	361	11,789	73
301.0-350.9 cu. in.	53,134	29,538	10,834		15,001.0-25,000.9 cu. in.		155	5,293	
351.0-400.9 cu. in.		2,889	1,261		25,001.0 cu. in. and over	205	205	10,721	
401.0-500.9 cu. in.	20,450	8,923	5,418		Other engines (including gas)	59,566	56,783	23,510	2,783
501.0-600.9 cu. in.		4,986	3,970		250.9 cu. in. and under		53,085	2,685	
601.0-700.9 cu. in.		757	819		251.0-500.9 cu. in.	(d)	1,116	790	(d)
701.0-800.9 cu. in.	16,277	1,415	2,013	7,788	501.0-1000.9 cu. in.		1,203	1,144	
801.0-900.9 cu. in.		339	651		1001.0-2000.9 cu. in.		642	1,829	
901.0-1000.9 cu. in.		112	258		2001.0 cu. in. and over		677	17,086	
1001.0-2000.9 cu. in.		607	1,712						
2001.0-5000.9 cu. in.		273	4,170						

^d Withheld to avoid disclosing figures for individual companies.

TABLE 6-F.—OUTBOARD MOTORS, QUANTITY AND VALUE, BY HORSEPOWER RATING AND PISTON DISPLACEMENT: 1947

(Money figures in thousands of dollars)

PRODUCT	Total shipments and interplant transfers		PRODUCT	Total shipments and interplant transfers	
	Quantity (number of units)	Value f.o.b. plant		Quantity (number of units)	Value f.o.b. plant
Outboard motors	584,458	\$50,038	Outboard motors—Continued		
By horsepower rating:			By piston displacement:		
2.9 hp. and under	33,951	5,296	5.9 cu. in. and under	219,012	\$15,182
3.0-3.9 hp.	110,368	6,733	6.0 cu. in. and over	365,446	34,856
4.0-5.9 hp.	247,696	21,431			
6.0-7.9 hp.	99,514	9,382			
8.0-8.9 hp.					
9.0 hp. and over	42,929	7,196			

TABLE 6-G.—DIESEL AND SEMI-DIESEL ENGINES (EXCEPT AUTOMOTIVE), QUANTITY AND VALUE, BY R.P.M.: 1947

[Money figures in thousands of dollars]

PRODUCT	Total			750 r.p.m. and under			Over 750 r.p.m.		
	Shipments to other companies		Production for incorporation into products of the same company (including transfers to other plants of the company)	Shipments to other companies		Production for incorporation into products of the same company (including transfers to other plants of the company)	Shipments to other companies		Production for incorporation into products of the same company (including transfers to other plants of the company)
	Quantity (number of units)	Value f.o.b. plant		Quantity (number of units)	Value f.o.b. plant		Quantity (number of units)	Value f.o.b. plant	
Diesel and semi-Diesel engines, total	63,058	\$156,969	37,125	3,867	\$56,763	663	59,191	\$100,206	36,462
By horsepower rating:									
5.9 h.p. and under	1,966	533					1,966	533	
6.0-10.9 hp	5,078	2,712	9,428				5,078	2,712	
11.0-50.9 hp	11,025	10,108		1,976	1,328		9,049	8,780	
51.0-70.9 hp	10,741	11,440	10,637	70	249		10,671	11,191	
71.0-100.9 hp	12,656	18,171	9,116	136	555		12,520	17,616	
101.0-150.9 hp	13,496	32,051	5,102	262	1,796		13,234	30,255	
151.0-200.9 hp	5,014	17,893	1,014	133	1,314	(d)	4,881	16,579	(d)
201.0-300.9 hp	1,269	9,311		253	3,627		1,016	5,684	
301.0-400.9 hp	712	6,248	67	102	2,051		610	4,197	
401.0-800.9 hp	667	19,771	277	501	17,112		166	2,659	
801.0-900.9 hp	79	5,447		79	5,447				
901.0-1000.9 hp	70	3,823	506	70	3,823				
1001.0-1500.9 hp	185	9,940		185	9,940				
1501.0 hp. and over	100	9,521	888	100	9,521				
By piston displacement:									
16.0-50.9 cu. in.	5,317	2,305	717				5,317	2,305	
51.0-100.9 cu. in.	2,357	1,472					2,357	1,472	
101.0-150.9 cu. in.	6,412	5,281	11,228				6,412	5,281	
151.0-300.9 cu. in.	17,682	19,948		1,917	1,276		15,765	18,672	
301.0-1000.9 cu. in.	24,191	47,514	20,932	349	1,958		23,842	45,556	
1001.0-1500.9 cu. in.	3,629	13,399		103	1,027	(d)	3,526	12,372	(d)
1501.0-3000.9 cu. in.	1,908	12,709	4,175	198	2,125		1,710	10,584	
3001.0-10,000.9 cu. in.	841	17,538		579	13,574		262	3,964	
10,001.0-15,000.9 cu. in.	361	11,789		361	11,789				
15,001.0-25,000.9 cu. in.	155	5,293	73	155	5,293				
25,001.0 cu. in. and over	205	19,721		205	19,721				

^d Withheld to avoid disclosing figures for individual companies.

TABLE 6-H.—INTERNAL-COMBUSTION ENGINES (EXCEPT AUTOMOTIVE AND AIRCRAFT), NUMBER BY HORSEPOWER RATING: 1947 AND 1939

PRODUCT	1947 shipments			1939 production		
	Gasoline and other carburetor, except outboard	Outboard motors	Diesel and semi-Diesel	Gasoline and other carburetor, except outboard	Outboard motors	Diesel and semi-Diesel
Total	2,140,516	584,458	100,183	348,460	129,335	19,263
5.9 hp. and under	1,275,845	442,015		215,228	87,000	
6.0-10.9 hp	130,777		27,497	13,472	37,789	189
11.0-20.9 hp	144,918			19,389	1,932	905
21.0-50.9 hp	446,493			56,870	2,600	4,639
51.0-100.9 hp	113,643		43,150	39,630	14	6,255
101.0-200.9 hp		142,443	24,626	3,597		6,301
201.0-400.9 hp			2,048	319		482
401.0-600.9 hp			471	23		176
601.0-1000.9 hp	28,840		1,218	32		181
1001.0-5000.9 hp			1,173			135
5001.0 hp. and over						

NOTE: This table does not include gas and other (dual fuel, etc.) engines. See text for explanation of differences between 1939 and 1947 in the classification of engines by size.

¹ The 1939 data do not include engines manufactured for installation by ship, boat, and tractor builders. The 1947 data include engines produced for incorporation into other products of the same company, such as ships, boats, tractors, pumps, etc.

CENSUS OF MANUFACTURES: 1947

TABLE 7.—SELECTED MATERIALS CONSUMED, BY KIND: 1947

[The table below summarizes the consumption of selected metal shapes by manufacturers during 1947. For each shape, manufacturing establishments were required to report consumption, in quantity and cost, provided that such usage during 1947 exceeded the following amounts: for iron castings, steel castings, each of six carbon steel shapes—50 short tons; for alloy steel bars and all other alloy steel—25 short tons; for stainless steel, brass and copper wire mill shapes, copper and brass castings, aluminum mill shapes and aluminum castings—10 short tons]

[Money figures in thousands of dollars]

METAL SHAPE	STEAM ENGINES AND TURBINES INDUSTRY			INTERNAL- COMBUSTION ENGINES INDUSTRY			TRACTORS INDUSTRY		
	Establishments consuming more than specified quantities								
	Number	Short tons	Cost	Number	Short tons	Cost	Number	Short tons	Cost
Iron castings, rough and semifinished.....	15	18,528	\$5,382	49	221,898	\$60,220	38	365,494	\$66,097
Steel castings, rough and semifinished.....	10	11,763	5,835	15	7,078	2,778	18	40,238	13,781
Steel mill shapes and forms.....	n.a.	46,846	6,882	n.a.	80,384	11,224	n.a.	576,502	47,514
Carbon steel:									
Bars and bar shapes.....	8	6,111	661	33	24,548	2,971	41	252,646	20,319
Sheet and strip.....	5	4,374	708	28	20,426	3,038	32	68,983	5,556
Structural shapes.....	5	1,029	89	7	1,228	107	17	28,662	1,961
Plates.....	9	23,445	1,966	12	11,068	955	20	47,316	3,584
Wire.....	(1)	6,689	941	(1)	120	13	8	1,229	113
All other mill shapes and forms.....	6			10	9,612	2,149	14	113,422	9,041
Alloy steel, except stainless:									
Bars and bar shapes.....	(1)	1,458	456	22	5,600	989	20	53,610	4,937
All other mill shapes and forms.....	(1)	773	98	(1)	478	80	(1)	9,891	1,406
Stainless steel.....	6	2,967	1,963	11	1,304	922	(1)	803	597
Copper and copper-base alloy:									
Brass and wire mill shapes and forms.....	5	1,937	1,396	18	13,019	7,502	(1)	2,997	1,010
Castings, rough and semifinished.....	8	800	793	23	1,281	1,172	8	682	548
Aluminum:									
Aluminum mill shapes.....	(1)	(d)	(d)	7	1,374	908			
Castings, rough and semifinished.....	(1)	25	34	29	5,383	6,291	6	2,150	1,764

METAL SHAPE	FARM MACHINERY (EXCEPT TRACTORS) INDUSTRY			CONSTRUCTION AND MINING MACHINERY INDUSTRY			OIL-FIELD MACHINERY AND TOOLS INDUSTRY		
	Establishments consuming more than specified quantities								
	Number	Short tons	Cost	Number	Short tons	Cost	Number	Short tons	Cost
Iron castings, rough and semifinished.....	93	203,175	\$42,036	108	89,430	\$17,596	27	14,674	\$2,431
Steel castings, rough and semifinished.....	44	9,066	3,474	138	178,029	53,585	51	23,566	9,275
Steel mill shapes and forms.....	n.a.	1,278,347	112,410	n.a.	779,391	67,009	n.a.	255,080	27,626
Carbon steel:									
Bars and bar shapes.....	281	630,852	48,658	219	161,019	14,215	62	44,003	3,965
Sheet and strip.....	270	391,912	36,709	150	84,413	7,198	22	20,659	2,028
Structural shapes.....	128	64,409	5,767	186	165,201	12,044	34	40,349	3,433
Plates.....	109	70,545	5,770	212	201,428	22,992	38	32,413	2,935
Wire.....	49	15,744	1,612	12	4,713	684	(1)	514	110
All other mill shapes and forms.....	66	51,175	7,020	48	29,912	3,118	27	13,671	1,716
Alloy steel, except stainless:									
Bars and bar shapes.....	39	17,085	2,222	77	27,015	3,603	59	88,839	11,600
All other mill shapes and forms.....	24	34,786	3,221	24	24,622	2,338	20	8,546	1,741
Stainless steel.....	13	1,839	1,531	18	978	817	(1)	86	98
Copper and copper-base alloy:									
Brass and wire mill shapes and forms.....	26	1,829	1,426	21	1,491	1,391	9	179	128
Castings, rough and semifinished.....	25	1,138	867	41	2,473	1,863	16	774	621
Aluminum:									
Aluminum mill shapes.....	34	3,428	1,907						
Castings, rough and semifinished.....	28	2,592	2,026	7	321	236	(1)	35	69

^d Withheld to avoid disclosing figures for individual companies.

n.a.—Not available.

¹ Less than 5 establishments.

TABLE 8.—NUMBER OF ESTABLISHMENTS PERFORMING SELECTED METALWORKING OPERATIONS: 1947

[The figures in the table represent the number of establishments maintaining the metalworking operation specified, according to the usual number of production workers employed in the operation during 1947]

METALWORKING OPERATION	STEAM ENGINES AND TURBINES INDUSTRY						INTERNAL-COMBUSTION ENGINES INDUSTRY						TRACTORS INDUSTRY					
	Number of establishments performing selected metalworking operations																	
	Total	Distribution by number of production workers in the operation					Total	Distribution by number of production workers in the operation					Total	Distribution by number of production workers in the operation				
		1-4	5-19	20-49	50-99	100 and over		1-4	5-19	20-49	50-99	100 and over		1-4	5-19	20-49	50-99	100 and over
Foundry.....	6	2		1	1	2	18	1	3	2	4	8	13	2			1	10
Die casting.....							8	3	3		1	1	2		1	1		
Forging—presses, hammers, or upsetters.....	5	1	1	2	1		5		3	2			17	6	3	2	4	2
Electroplating.....							11	5	4	2			5	2	3			
Galvanizing and other hot dip coating.....							6	3	1	2			2		1	1		
Heat treating or annealing of metals.....	4	1	2	1			45	23	17	5			30	10	4	5	6	5
Automatic screw-machine department.....	4	1		1	2		38	16	11	7	1	3	26	6	5	10	2	3
Machine shop.....	17	1	1	3		12	95	7	19	11	16	42	74	15	16	15	8	20
Tool and die room.....	8	2	2	2	1	1	57	16	14	16	7	4	32	6	8	3	10	5
Pattern shop.....	10	2	3	3	2		23	15	3	4	1		15	3	6	4	1	1
Plate or structural fabrication.....	9	3	2		1	3	11	3	2	3	1	2	18	3	5	3	2	5
Stamping, blanking, forming, or drawing.....	4	1			2	1	23	6	11	4	2		33	10	8	5	3	7

METALWORKING OPERATION	FARM MACHINERY (EXCEPT TRACTORS) INDUSTRY						CONSTRUCTION AND MINING MACHINERY INDUSTRY						OIL-FIELD MACHINERY AND TOOLS INDUSTRY					
	Number of establishments performing selected metalworking operations																	
	Total	Distribution by number of production workers in the operation					Total	Distribution by number of production workers in the operation					Total	Distribution by number of production workers in the operation				
		1-4	5-19	20-49	50-99	100 and over		1-4	5-19	20-49	50-99	100 and over		1-4	5-19	20-49	50-99	100 and over
Foundry.....	115	13	29	30	22	21	64	2	14	20	16	12	12	1	3	3	3	2
Die casting.....	8	7	1				6	6					1	1				
Forging—presses, hammers, or upsetters.....	141	56	39	22	13	11	77	34	27	12	3	1	59	22	22	11	3	1
Electroplating.....	14	11	3				5	1	2	2			12	9	2	1		
Galvanizing and other hot dip coating.....	14	7	6	1			5	4	1				6	3		3		
Heat treating or annealing of metals.....	109	74	24	10	1		95	60	29	6			71	43	20	5	2	1
Automatic screw-machine department.....	57	39	15	1		2	28	18	6	2	1	1	17	9	7	1		
Machine shop.....	561	223	188	86	31	33	397	78	120	95	50	54	187	32	65	36	32	22
Tool and die room.....	171	75	57	23	9	7	100	34	41	18	6	1	40	11	19	6	3	1
Pattern shop.....	113	75	29	6	1	2	87	54	26	4	2	1	17	14	3			
Plate or structural fabrication.....	185	73	72	25	13	2	298	48	101	60	43	46	69	23	18	8	11	9
Stamping, blanking, forming, or drawing.....	342	146	102	55	21	18	88	45	28	11	2	2	18	9	6	2	1	

NOTE:

In the Steam Engines and Turbines Industry, all establishments answered this inquiry.
 In the Internal-Combustion Engines Industry, a small number of establishments (less than 10 percent), mainly small ones, did not answer this inquiry on metalworking operations.
 In the Tractors Industry, a small number of establishments (less than 10 percent), mainly small ones, did not answer this inquiry on metalworking operations.
 In the Farm Machinery (Except Tractors) Industry, 194 small establishments did not report any detailed statistics including this inquiry. In addition, a number of other establishments, mainly small ones, also did not answer this inquiry on metalworking operations.
 In the Construction and Mining Machinery Industry, 17 small establishments did not report any detailed statistics including this inquiry. In addition, a number of other establishments, mainly small ones, also did not answer this inquiry on metalworking operations.
 In the Oil-Field Machinery and Tools Industry, a small number of establishments (less than 10 percent), mainly small ones, did not answer this inquiry on metalworking operations.

METALWORKING MACHINERY

This report shows the 1947 Census of Manufactures statistics for establishments engaged primarily in the production of machine tools, other metalworking machinery such as bending machines, die-casting machines, forging machines, etc., and machine tool accessories, other metalworking machinery accessories, and machinists' precision tools. These establishments have been classified in three industries described separately below.

Machine Tools (*Standard Industrial Classification No. 3541.*)—This industry comprises establishments primarily engaged in manufacturing power-driven machine tools that shape metal by grinding or progressively cutting away chips. Important products of this industry include boring, broaching, drilling, gear-cutting and finishing, grinding, milling, and planing machines; lathes, shapers, and slotters; honing and lapping, polishing and buffing, sawing and cutting-off, contour-sawing and filing, tapping, threading, and rifling machines; and replacement and repair parts for machine tools. The rebuilding of machine tools is included in this industry. Establishments primarily engaged in manufacturing machinery for the shaping, pressing, or forging of metal, where the shaping action of such machines is not dependent upon a cutting tool are classified in Industry 3542, and machine-tool accessories, dies, and machinists' precision tools in Industry 3543.

While machine tools are usually built for industrial purposes, some types of small size, light construction, and low price are designed primarily for the home workshop, the laboratory, the service shop, or the like. Light type machine tools, usually of more precise construction than the home workshop type, are also used in industrial plants, either in batteries to accomplish the same purpose as one or two heavier machine tools, as accessory equipment in the company's machine shop, as "stand-by machines," or for special types of work. In some industries where a light machine tool more adequately serves the purpose at hand, this type of tool is part of the main production line. Home workshop tools may be used incidentally in industrial establishments, but this will be the exception rather than the rule.

The home workshop type of machine tool is primarily designed for metalworking use but can be used as a woodworking tool. Home workshop machine tools which were designed primarily for metalworking or for use on metal and wood are classified in this industry. However, those that are designed primarily for woodworking are classified in Industry 3553, "Woodworking Machinery." Separate data are shown in table 6 for machine tools designed primarily for home workshops, laboratories, etc. The principal type of tools falling in this category are drill presses, grinders, lathes, shapers, sawing and cut-off machines, and tapping machines.

Because the report form did not draw a distinction between the light-type machines and the heavier type, it has been impossible to effect a precise separation between these types of

tools. For many of the major categories of machine tools such as boring machines, broaching machines, centering machines, gear-cutting and finishing machines, planers, and shapers, there is no problem of the light-type as distinct from the heavier type of machine. For drilling machines, grinding and polishing machines, lathes, milling machines, and sawing and cut-off machines, considerable quantities of the light-type of machine tool are produced. A segregation has been made, however, on the basis of the average unit value of all machine tools of a specific type reported by an establishment. It is recognized that a company's output of a particular type of machine may extend over a fairly broad range of models and types. For that reason, no attempt has been made to segregate "across the board" the light-type machine tools from the heavier type. Where no average value segregation was feasible and the light machine tools were included with the heavy type, this is indicated by the phrase "including light industrial types" in the product heading in table 6. These machine tools have a more significant effect on the number of machine tools shipped than on the value of shipments.

Of the total value of \$416 million of machine tools, 13 percent was shipped by establishments classified in other industries. Establishments classified in the Machine Tools Industry shipped \$360 million of machine tools and \$110 million of other products such as small cutting tools, precision measuring tools, woodworking machinery, etc.

Metalworking Machinery, Not Elsewhere Classified (*Full Standard Industrial Classification title and number: Metalworking Machinery (except Machine Tools), 3542.*)—This industry comprises establishments primarily engaged in manufacturing machinery for shaping, pressing, forging, or bending metal, where the shaping action of such machines is not dependent upon a cutting tool. Important products of this industry include bending machines; can forming and soldering, and other sheet-metalworking machinery; die-casting machines; forging machines, such as drop hammers (impression die), forging hammers (flat die), forging presses, bulldozers, and upsetters; portable power-driven metalworking tools, and flexible-shaft machines; presses (forming, stamping, and punch); riveting machines (not portable); rod and wire-forming and fabricating machines; rolling-mill machinery and equipment; shears; spring-winding and forming machines; acetylene welding and cutting apparatus; wire-drawing machines; and replacement and repair parts. Establishments primarily engaged in manufacturing electric welding apparatus are classified in Industry 3617.

According to the Standard Industrial Classification, portable electric woodworking tools are classified in Industry 3553, "Woodworking Machinery." However, the 1947 census includes portable electric woodworking tools in this industry since there is no clear distinction between the portable electric tools for woodworking and for metalworking. The reports for 1939 have been retabulated on a basis comparable with 1947. Data for earlier years, however, are not available.

Of the total value of \$492 million of metalworking machinery, 13 percent was shipped by establishments classified in other industries. Establishments classified in the Metalworking Machinery Industry shipped \$430 million of metalworking machinery (except machine tools) and \$64 million of other products, such as woodworking machinery, jigs and fixtures, machine tools, etc.

Cutting Tools, Jigs, Fixtures, Etc. (*Full Standard Industrial Classification title and number: Machine-Tool Accessories, Other Metalworking Machinery Accessories, and Machinists' Precision Tools, 3543.*)—This industry comprises establishments primarily engaged in manufacturing attachments and accessories for machine tools and other metalworking machinery; small power-driven cutting and shaping tools and tool holders; and precision measuring tools. Important products of this industry include: (1) attachments for lathes, boring, drilling, and milling machines and other machine tools; balancing machines; die-casting dies; jigs, fixtures, drop-forging dies, forming and stamping dies and punches, and subpresses; tools for screw and automatic machines; and semifinished products such as die sets, leather pins, dowel pins, and die springs; (2) arbors and collars; broaches; collets or sockets; counterboxes; countersinks; countersink-drill combinations; drills; cutters; reamers; threading tools (taps, dies, and pipe-threading tools) and other cutting tools and tool

holders; and (3) precision measuring tools (micrometers and verniers); gauges (plug, ring, snap, and thread); and other measuring tools. Establishments primarily engaged in manufacturing hand tools (except power-driven) are classified in Group 342.

A comparison of the number of establishments in 1947 with those for 1939 shows a very large increase, principally in small establishments. Although it is undoubtedly true that the industry has expanded greatly since 1939, it is probable that some of the increase shown in the number of establishments is due to the fact that some small establishments, although active in 1939, were not included in the census for that year, or were classified in other industries.

Although quantity data were requested for machinists' precision tools, these data cannot be published since many of the reporting establishments indicated that their records did not provide the number of units shipped.

Of the total value of \$675 million of cutting tools, jigs, fixtures, etc., 20 percent was shipped by establishments classified in other industries. Establishments classified in the Cutting Tools, Jigs, Fixtures, Etc., Industry shipped \$540 million of cutting tools, jigs, fixtures, etc., and \$58 million of other products such as machine tools, other metalworking machinery, stampings, etc.

TABLE 1.—GENERAL STATISTICS FOR THE UNITED STATES: 1947 AND EARLIER CENSUS YEARS

[Money figures in thousands of dollars. For explanation of column captions see GENERAL EXPLANATIONS]

INDUSTRY AND CENSUS YEAR	Number of establishments	All employees		Production and related workers		Value added by manufacture ¹	Cost of materials, fuel, electricity, and contract work ²	Value of products shipped ³
		Number (average for the year) ⁴	Salaries and wages, total ⁵	Number (average for the year) ⁶	Wages, total ⁷			
Machine tools:								
1947.....	316	70,657	\$235,938	54,892	\$166,206	\$347,965	\$153,917	\$501,882
1939 ⁴	224	n.a.	n.a.	36,997	62,867	155,941	65,326	221,267
1937 ⁵	205	n.a.	n.a.	37,477	62,610	143,224	59,515	202,739
Metalworking machinery, n.e.c.:								
1947.....	428	54,988	182,068	43,568	132,810	302,842	217,340	520,182
1939 ⁴	231	n.a.	n.a.	18,123	28,238	73,439	40,292	113,731
Cutting tools, jigs, fixtures, etc.:								
1947.....	3,549	88,898	310,834	74,522	242,570	480,375	143,452	623,827
1939 ⁴	1,015	n.a.	n.a.	25,834	42,405	96,855	32,676	129,531
1937 ⁵	806	38,099	71,367	32,893	55,057	116,090	46,002	162,002
1935.....	731	27,222	44,714	23,138	34,414	69,425	27,413	96,838
1933.....	587	15,007	17,613	12,757	14,159	33,501	10,882	44,383
1931.....	718	n.a.	n.a.	17,533	26,559	52,713	16,320	69,033
1929 ⁷	722	30,567	63,910	26,682	51,085	117,418	26,993	144,411

n.a.—Not available.

¹ Value of products less cost of materials, supplies, fuel, electricity, and contract work. See GENERAL EXPLANATIONS—Value added by manufacture.

² Figures for years prior to 1935 do not include cost of contract work.

³ For 1947 and 1929, value of products shipped; for all other years, value of products made. See GENERAL EXPLANATIONS—Value of products shipped.

⁴ Revised.

⁵ The figures for "Machine tools" prior to 1937 are not sufficiently comparable with those for later years because they include data for metalworking machinery other than machine tools which is now classified in "Metalworking machinery, n.e.c."

⁶ The returns for 1939 have been retabulated to provide figures comparable with those for 1947. No comparable figures are available for prior years.

⁷ "Cutting tools, jigs, fixtures, etc." was formerly included with "Machine tools," "Foundry and machine shop products, n.e.c.," and "Tools, not including edge tools." Separate figures are therefore not available prior to 1929.

CENSUS OF MANUFACTURES: 1947

TABLE 2.—GENERAL STATISTICS BY DIVISIONS AND STATES: 1947

[Money figures and man-hours in thousands. For explanation of column captions see GENERAL EXPLANATIONS]

INDUSTRY, DIVISION, AND STATE	Number of establishments	All employees		Production and related workers			Value added by manufacture	Cost of materials, fuel, electricity, and contract work	Value of products shipped	Expenditures for new plant and equipment
		Number (average for the year)	Salaries and wages, total	Number (average for the year)	Man-hours, total	Wages, total				
Machine tools, total¹	316	70,657	\$235,938	54,892	113,432	\$166,206	\$347,965	\$153,917	\$501,882	\$13,836
New England	59	23,146	73,274	17,723	35,042	52,153	93,566	39,621	133,187	3,817
Massachusetts	21	4,103	13,596	2,882	5,857	8,324	18,084	6,984	25,068	380
Rhode Island	10	6,897	18,457	5,334	10,608	14,134	24,341	8,054	32,395	784
Connecticut	21	8,294	28,033	6,694	13,071	21,770	35,301	17,653	53,044	2,099
Middle Atlantic	55	7,509	24,554	6,066	12,698	17,863	30,008	14,589	53,597	809
New York	30	4,230	14,484	3,394	6,985	10,634	22,057	7,313	29,370	345
New Jersey	11	1,270	4,475	1,028	2,280	3,095	8,685	3,162	11,837	206
Pennsylvania	14	2,069	5,595	1,644	3,433	4,134	8,266	4,124	12,390	258
East North Central	164	38,158	131,978	29,779	62,078	92,458	204,406	94,380	298,766	8,765
Ohio	59	17,275	58,878	13,239	28,253	41,077	90,901	42,761	133,662	3,926
Illinois	24	4,244	15,217	3,287	7,246	10,309	25,889	12,613	38,502	1,083
Michigan	53	8,359	30,601	6,920	14,019	22,453	43,160	23,777	60,937	1,862
West North Central	15	1,377	4,925	998	2,003	2,872	8,871	3,948	12,819	326
Minnesota	6	426	1,450	356	722	1,012	2,248	2,243	4,491	145
South and West	23	407	1,207	326	711	800	2,114	1,399	3,513	119
California	15	138	416	109	216	307	723	547	1,270	53
Metalworking machinery, n.e.c., total¹	428	54,988	182,068	43,568	92,108	132,810	302,842	217,340	520,182	11,621
New England	48	3,827	12,895	3,020	6,991	9,363	19,343	11,725	31,068	1,044
Massachusetts	20	1,052	3,649	817	1,888	2,379	5,874	3,815	9,689	322
Connecticut	22	2,278	7,998	1,820	4,254	6,019	11,818	6,338	17,656	659
Middle Atlantic	97	18,352	60,071	14,719	30,981	46,143	89,025	79,109	169,124	2,705
New York	42	5,568	17,130	4,321	9,002	13,009	24,553	10,305	43,858	1,118
New Jersey	26	4,444	14,269	3,119	6,324	9,346	20,261	17,222	37,483	720
Pennsylvania	29	8,340	28,672	7,279	15,655	23,788	45,111	42,072	87,783	867
East North Central	202	26,540	90,392	21,089	44,507	64,093	163,390	108,796	272,186	6,880
Ohio	65	14,293	46,898	11,645	24,547	35,287	77,739	60,204	137,943	1,994
Illinois	65	8,241	30,069	6,203	13,270	19,884	60,810	30,214	96,724	4,022
Michigan	39	2,564	8,374	2,058	4,142	6,248	16,028	7,366	23,094	401
West North Central	27	1,864	5,663	1,490	3,223	3,957	10,090	6,847	16,937	433
Minnesota	13	670	2,156	501	1,036	1,360	3,830	2,487	6,317	194
South and West	54	4,405	13,017	3,250	6,406	8,354	20,094	10,773	30,867	579
California	37	1,173	3,886	852	1,740	2,570	6,140	2,873	9,022	229
Cutting tools, jigs, fixtures, etc., total¹	3,549	88,898	310,834	74,522	156,492	242,570	480,375	143,462	623,827	25,885
New England	437	17,914	53,371	15,074	31,311	41,585	83,348	22,703	100,111	4,697
Vermont	5	466	1,324	388	848	1,005	2,445	737	3,182	(4)
Massachusetts	177	9,639	27,761	8,117	16,719	21,901	43,433	12,568	55,991	2,068
Connecticut	207	6,278	19,957	5,297	11,219	15,433	30,559	7,944	38,503	1,894
Middle Atlantic	833	12,386	39,575	10,603	22,737	31,150	64,165	17,289	81,454	2,028
New York	427	4,877	16,020	4,199	9,103	12,821	24,518	6,853	31,371	1,136
New Jersey	228	2,340	7,615	2,060	4,201	6,105	12,536	3,560	16,096	655
Pennsylvania	178	5,160	15,940	4,344	9,343	12,224	27,111	8,876	33,987	1,135
East North Central	1,884	54,698	206,725	45,497	95,603	160,507	314,632	97,016	411,648	16,626
Ohio	403	12,922	47,548	22,565	36,378	50,589	73,058	18,512	91,670	3,247
Indiana	159	2,977	11,187	2,578	5,589	8,924	15,536	4,381	19,017	935
Illinois	384	11,419	38,838	9,320	19,099	26,734	59,644	19,213	78,857	3,194
Michigan	778	24,146	98,162	20,203	41,529	76,419	149,065	50,298	199,363	8,410
Wisconsin	160	3,234	11,000	2,787	6,221	9,052	17,329	4,012	21,941	840
West North Central	116	1,666	4,718	1,386	2,890	3,847	7,222	2,115	9,337	520
Minnesota	37	450	1,204	388	792	1,050	1,708	369	2,077	129
Missouri	43	652	1,942	506	1,031	1,459	2,849	1,001	3,850	171
South	69	782	1,912	688	1,427	1,570	3,199	1,315	4,514	388
Texas	12	117	295	109	228	274	500	210	719	63
Mountain	11	88	236	79	160	219	365	109	474	31
Pacific	199	1,364	4,297	1,195	2,364	3,692	7,444	2,845	10,289	607
California	186	1,301	4,087	1,137	2,245	3,512	7,127	2,598	9,725	678

¹ Withheld to avoid disclosing figures for individual companies.² For each producing State not shown separately in the table (see GENERAL EXPLANATIONS "Disclosure of Data for Individual Companies"), there are shown below the number of establishments and, in parentheses, the number of employees for States represented by three or more companies, when possible.**Machine tools:** New England, New Hampshire, 2; Vermont, 5; East North Central, Indiana, 8 (1,722); Wisconsin, 20 (5,558); West North Central, Iowa, 2; Missouri, 6 (860); Nebraska, 1; South and West, Maryland, 2; North Carolina, 1; Kentucky, 1; Oklahoma, 1; Texas, 2; Washington, 1.**Metalworking machinery, n.e.c.:** New England, Maine, 1; New Hampshire, 1; Vermont, 1; Rhode Island, 3 (377); East North Central, Indiana, 18 (784); Wisconsin, 15 (658); West North Central, Iowa, 2; Missouri, 12; South and West, Delaware, 1; Maryland, 2; Kentucky, 2; Texas, 3 (43); Washington, 4 (452); Oregon, 5 (180).**Cutting tools, jigs, fixtures, etc.:** New England, New Hampshire, 6 (39); Rhode Island, 42 (1,492); West North Central, Iowa, 26 (360); Nebraska, 3 (13); Kansas, 7 (191); South, Delaware, 4 (45); Maryland, 16 (153); West Virginia, 1; North Carolina, 3 (18); Georgia, 5 (85); Florida, 3 (15); Kentucky, 10 (198); Tennessee, 8 (79); Alabama, 2; Louisiana, 2; Oklahoma, 3 (18); Mountain, Colorado, 5 (21); New Mexico, 2; Arizona, 2; Utah, 2; Pacific, Washington, 10 (48); Oregon, 3 (15).

METALWORKING MACHINERY

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TABLE 3.—DETAILED STATISTICS FOR THE UNITED STATES: 1947

[Money figures in thousands of dollars. For explanation of line captions see GENERAL EXPLANATIONS]

ITEM	Industry			ITEM	Industry		
	Machine tools	Metal-working machinery, n.e.c.	Cutting tools, jigs, fixtures, etc.		Machine tools	Metal-working machinery, n.e.c.	Cutting tools, jigs, fixtures, etc.
ALL ESTABLISHMENTS				ESTABLISHMENTS REPORTING DETAILED STATISTICS—Continued			
Number of establishments.....	316	428	3,549	Cost of materials, fuel, electricity, and contract work.....	\$153,587	\$215,582	\$134,282
All employees:				Materials, parts, containers, and supplies.....	145,287	200,964	118,548
Number (average for the year).....	70,657	54,088	88,898	Fuels, total.....	2,368	2,833	2,475
Salaries and wages, total.....	\$235,938	\$182,068	\$310,834	Bituminous coal.....	868	891	720
Production and related workers:				Anthracoite.....	87	58	57
Number (average for the year).....	54,892	43,568	74,522	Coke.....	252	280	94
Man-hours, total..... thousands..	113,432	92,108	156,492	Fuel oils.....	724	961	901
Wages, total.....	\$166,206	\$132,810	\$242,570	Gas.....	397	607	642
Value added by manufacture.....	\$347,965	\$302,842	\$480,375	Other fuels.....	38	36	61
ESTABLISHMENTS REPORTING DETAILED STATISTICS				Purchased electric energy.....	3,605	2,041	4,056
Number of establishments.....	296	343	2,474	Contract and commission work.....	2,329	9,144	10,805
All employees:				Value of inventories:			
Number (average for the year).....	70,526	54,542	84,147	Beginning of year, total.....	\$156,976	\$121,089	\$100,675
Salaries and wages, total.....	\$235,569	\$180,849	\$297,923	Finished products.....	35,502	26,108	28,511
Production and related workers:				Materials, supplies, and work in process.....	121,474	95,881	72,164
Number (average for the year).....	54,767	43,136	69,885	End of year, total.....	155,531	134,809	107,392
Man-hours, total..... thousands..	113,180	91,328	147,240	Finished products.....	40,543	31,437	34,860
Wages, total.....	\$165,864	\$131,067	\$230,244	Materials, supplies, and work in process.....	114,988	103,372	72,532
Value added by manufacture.....	\$347,786	\$301,190	\$469,649	Expenditures for plant and equipment:			
Number of employees for pay period ended nearest Oct. 15:				New plant and equipment.....	\$13,836	\$11,621	\$25,885
All employees.....	67,065	53,772	81,190	Construction and major alteration of fixed plants.....	3,524	3,892	6,224
Male.....	60,543	47,971	72,564	Buildings.....	3,360	3,677	6,642
Female.....	6,522	5,801	8,626	Other construction.....	154	215	582
Production and related workers:				Machinery and equipment.....	10,312	7,729	19,661
Male.....	51,499	42,499	67,081	Production machinery and equipment.....	8,991	6,730	17,387
Female.....	49,775	40,217	63,188	Other machinery and equipment.....	1,321	999	2,274
Force-account construction workers:				Used plant and equipment, and land.....	3,308	3,052	3,742
Administrative, supervisory, sales, and all other.....	15,566	11,273	14,078	Number of highway-type motor vehicles owned or leased:			
Male.....	10,768	7,754	9,345	Trucks.....	285	272	717
Female.....	4,798	3,519	4,733	By manufacturer's rated capacity:			
All employees, number by month:				Under 1½ tons.....	131	107	473
January.....	76,520	56,303	86,166	1½ tons.....	86	75	169
February.....	76,692	56,549	87,531	Over 1½ tons and less than 3½ tons.....	43	44	62
March.....	74,451	56,178	87,941	3½ tons and less than 5 tons.....	7	17	8
April.....	73,362	55,196	87,136	5 tons and over.....	18	29	5
May.....	71,294	54,037	85,684	By body type:			
June.....	70,549	53,391	84,079	Van.....	14	4	11
July.....	68,992	53,422	82,061	Stake or platform.....	147	148	199
August.....	68,405	53,479	81,558	Panel or light delivery.....	98	69	400
September.....	67,618	53,721	81,447	All other trucks.....	26	51	107
October.....	67,065	53,772	81,190	Truck tractors.....	2	10	8
November.....	66,321	54,061	80,792	Trailers and semitrailers.....	3	12	11
December.....	65,773	54,337	81,245				

TABLE 4.—SELECTED GENERAL STATISTICS BY SIZE OF ESTABLISHMENT, FOR THE UNITED STATES: 1947

[Money figures in thousands of dollars. For explanation of line captions see GENERAL EXPLANATIONS. Data which cannot be shown without disclosing information for individual companies have been combined with figures for other groups. A * appears in the column where the figure has been omitted and the combined figure is printed in italics]

INDUSTRY AND ITEM	Total, all establishments	Establishments with an average of—									
		1-4 employees	5-9 employees	10-19 employees	20-49 employees	50-99 employees	100-249 employees	250-499 employees	500-999 employees	1,000-2,499 employees	2,500 employees and over
Machine tools:											
Number of establishments.....	316	36	22	49	49	46	59	24	15	12	4
Number of employees (average for the year).....	70,657	104	156	665	1,581	3,215	9,898	8,781	10,504	19,013	16,740
Value added by manufacture.....	\$347,965	\$553	\$707	\$3,288	\$8,829	\$19,083	\$50,753	\$53,688	\$60,687	\$84,015	\$66,362
Metalworking machinery, n.e.c.:											
Number of establishments.....	428	76	62	69	68	49	47	29	19	8	1
Number of employees (average for the year).....	54,088	175	417	932	2,203	3,474	7,372	10,271	14,519	15,025	(d)
Value added by manufacture.....	\$302,842	\$836	\$2,090	\$5,239	\$13,917	\$20,607	\$43,107	\$57,610	\$80,728	\$78,709	(e)
Cutting tools, jigs, fixtures, etc.:											
Number of establishments.....	3,549	1,221	813	696	516	160	87	33	16	7	
Number of employees (average for the year).....	88,898	2,801	5,440	9,478	15,936	10,689	12,696	10,753	11,610	9,515	
Value added by manufacture.....	\$480,375	\$16,055	\$26,950	\$50,221	\$88,746	\$60,992	\$73,469	\$58,657	\$61,544	\$43,741	

CENSUS OF MANUFACTURES: 1947

TABLE 5.—VALUE OF PRODUCTS SHIPPED, BY BROAD CLASSES OF PRODUCTS, FOR THE UNITED STATES: 1947

[The first column shows the total value of shipments of the specified industry, divided among: (A) products classified in (primary to) the industry, (B) products classified in other industries (secondary to the specified industry), and (C) miscellaneous receipts. The second column shows the value of shipments of the primary products of the specified industry reported by establishments in other industries. The third column shows the total value of shipments of the primary products of the specified industry by all reporting manufacturers]

[Money figures in thousands of dollars]

MACHINE TOOLS INDUSTRY	Shipped by—			METALWORKING MACHINERY, N.E.C., INDUSTRY	Shipped by—		
	Machine tools industry	Other industries	All industries		Metalworking machinery, n.e.c., industry	Other industries	All industries
Total shipments by the industry	\$501,882			Total shipments by the industry	\$520,182		
A. Machine tools	350,819	\$56,061	\$415,880	A. Metalworking machinery, n.e.c.	420,581	\$62,533	\$482,114
Boring machines.....	24,962	833	25,825	Rolling mill machinery and equipment.....	82,354	13,720	96,074
Drilling machines.....	31,819	1,698	33,517	Metalworking presses, except forging.....	85,982	8,624	94,606
Gear cutting and finishing machines.....	13,875	3,844	17,719	Power-driven hand tools.....	103,622	8,576	112,198
Grinding and polishing machines, except gear-tooth grinding, honing, lapping, polishing, and buffing machines.....	44,610	11,754	56,364	Other metalworking machinery.....	152,074	20,519	181,593
Lathes.....	87,705	5,203	92,908	Metalworking machinery, not reported by type.....	5,549	2,094	7,643
Milling machines.....	32,277	3,001	35,278	B. Secondary products	64,413		
Other machine tools (except home workshops, laboratory, etc., type) and parts for machine tools.....	89,027	10,181	108,208	Woodworking machinery, other than home workshop.....	8,138		
Machine tools designed primarily for home workshops, laboratories, etc., except power-driven hand tools.....	22,428	8,453	30,881	Jigs, fixtures, and similar accessories.....	2,441		
Rebuilt machine tools.....	10,475	305	10,780	Grinding and polishing machines, except gear-tooth grinding, honing, lapping, polishing, and buffing machines.....	3,172		
Machine tools, not reported by type.....	2,611	1,789	4,400	Other secondary products (pumps, machine tools, construction machinery, etc.).....	50,662		
B. Secondary products	110,213			C. Miscellaneous receipts	26,188		
Jigs, fixtures etc.....	2,248			Contract and commission work.....	4,182		
Small cutting tools.....	19,993			Repair work.....	18,220		
Precision measuring tools.....	6,024			Scrap and salable refuse.....	1,576		
Other metalworking accessories.....	19,475			Nonmanufacturing activities.....	2,201		
Woodworking machinery.....	8,830						
Other secondary products (construction machinery, food products machinery, etc.).....	53,643						
C. Miscellaneous receipts	31,850						
Contract and commission work.....	17,747						
Repair work.....	7,730						
Scrap and salable refuse.....	3,399						
Nonmanufacturing activities.....	2,974						

CUTTING TOOLS, JIGS, FIXTURES, ETC., INDUSTRY	Shipped by—		
	Cutting tools, jigs, fixtures, etc., industry	Other industries	All industries
Total shipments by the industry	\$623,827		
A. Cutting tools, jigs, fixtures, etc.	540,330	\$134,021	\$675,251
Jigs, fixtures, etc.....	254,702	50,753	314,515
Small cutting tools.....	170,101	34,132	204,233
Precision measuring tools.....	25,931	7,894	33,825
Other metalworking accessories.....	47,270	30,386	77,656
Cutting tools, jigs, fixtures, etc., not reported by type.....	42,266	2,756	45,022
B. Secondary products (machine tools, other metalworking machinery, stampings, etc.)	57,551		
C. Miscellaneous receipts	25,946		
Contract and commission work.....	19,050		
Repair work.....	4,817		
Scrap and salable refuse.....	1,174		
Nonmanufacturing activities.....	905		

TABLE 6.—QUANTITY AND VALUE OF PRODUCTS, TOTALS FOR THE UNITED STATES: 1947 AND 1939

[Money figures in thousands of dollars]

PRODUCT	1947		1939	
	Total shipments and interplant transfers		Total production for sale and interplant transfer	
	Number of units	Value f.o.b. plant	Number of units	Value f.o.b. plant
Boring machines	1,444	\$25,825	1,493	\$14,166
Horizontal boring, drilling, and milling machines:				
Table type.....	267	5,786		
Other types (including floor type).....	100	3,901	341	5,253
Vertical boring and turning mills (including vertical turret lathes).....	331	7,780	417	5,551
Precision boring machines.....	445	5,896	702	2,928
Jig boring machines.....	218	1,457		
Other boring machines.....	83	1,025	33	434
Drilling machines (including light industrial types)	n.a.	33,517	n.a.	12,373
Sensitive drilling machines (chuck fitted to spindle nose—No. 1, 2, 3, or 4 morse taper):				
Bench type:				
Average value under \$200.....	12,213	244		
Average value \$200 and over.....	1,613	217	n.a.	975
Floor and pedestal types.....	11,072	4,703	n.a.	1,223
Vertical (upright) drilling machines:				
Standard single spindle:				
Average value under \$500.....	1,915	534		
Average value \$500 and over.....	884	1,705	693	905
Heavy duty single-spindle drilling machines.....	446	867		
Gang drills.....	1249	384	(2)	(2)

See footnotes at end of table.

TABLE 6.—QUANTITY AND VALUE OF PRODUCTS, TOTALS FOR THE UNITED STATES: 1947 AND 1939—Continued

PRODUCT	1947		1939	
	Total shipments and interplant transfers		Total production for sale and interplant transfer	
	Number of units	Value f.o.b. plant	Number of units	Value f.o.b. plant
Drilling machines (including light industrial types)—Continued				
Radial drilling machines, plain type:				
Under 13" column.....	758	\$4,310	798	\$3,561
13" column and over.....	1,808	3,066		
Multiple-spindle drilling machines, way and special types.....	1,139	16,537	738	2,078
Deep hole drilling machines, horizontal and vertical.....	15	184		
Other drilling machines (including radial other than plain) and drilling machines, not reported by type.....	n.a.	766	971	3,631
Gear cutting and finishing machines.....	1,682	17,719	1,730	11,243
Gear hobbing machines.....	499	5,642	426	2,420
Gear shapers, cutters (including planer type), and generators.....	885	9,409		
Gear finishing machines (including honing, lapping and gear-tooth grinding machines, etc.).....	298	2,668	1,304	8,823
Grinding and polishing machines (except gear-tooth grinding, honing, lapping, polishing, and buffing machines), including light industrial types.....	n.a.	56,364	n.a.	32,413
External cylindrical grinding machines:				
Plain.....	480	5,309	1,131	7,012
Universal.....	289	2,039	569	2,386
Roll grinders.....	40	2,222	(¹)	(¹)
Other external cylindrical grinding machines.....	267	4,450	(¹)	(¹)
Internal cylindrical grinding machines (including centerless).....	359	4,167	1,028	7,372
Surface grinding machines:				
Rotary table type, horizontal and vertical.....	387	3,644		
Reciprocating table type, horizontal and vertical spindle (including face grinders):				
Average value under \$1,000.....	682	232	2,436	4,736
Average value \$1,000 and over.....	2,226	4,778		
Other surface grinding machines (including planer type).....	n.a.	235		
Disc, bench, floor, and snag grinding machines:				
Disc grinders.....	526	2,369	434	518
Bench grinders.....	63,220	2,945		
Floor and snag grinders:			n.a.	294
Average value under \$500.....	6,716	1,456		
Average value \$500 and over.....	251	146		
Thread grinding machines.....	50	1,069	(¹)	(¹)
Tool and cutter grinding machines:				
Universal.....	1,697	3,013		
Special:			1,433	2,123
Average value under \$500.....	948	255		
Average value \$500-\$999.....	448	342		
Average value \$1,000 and over.....	210	825		
Honing machines (except gear honing).....	n.a.	3,409	357	1,359
Lapping machines (except gear lapping).....	135	619	218	815
Polishing and buffing machines:				
Average value under \$500.....	4,403	935	n.a.	268
Average value \$500 and over.....	2,245	3,342	n.a.	5,830
Other grinding machines (radius, spline, contour, plate edge, jig grinders, etc.).....	n.a.	7,456		
Grinding and polishing machines, not reported by type.....	n.a.	1,127		
(Lathes (including light industrial types)).....	n.a.	92,908	n.a.	49,849
Bench lathes (except bench turret lathes):				
Average value under \$500.....	16,819	3,180	15,191	2,288
Average value \$500 and over.....	709	1,122		
Engine lathes (manufacturing and tool room lathes):				
Up to and including 16" swing:				
Average value under \$2,000.....	6,232	6,302	4,756	6,818
Average value \$2,000 and over.....	2,829	13,344		
17"-23" swing.....	1,767	9,072	1,542	5,249
24"-36" swing.....	319	3,663		
Over 36" swing.....	42	1,179	125	1,133
Gap lathes.....	118	464	134	364
Other manufacturing and tool room lathes.....	113	579	(¹)	(¹)
Speed lathes.....	742	831	(¹)	(¹)
Turret lathes (except vertical turret lathes):				
Bench type.....	213	326	(¹)	(¹)
Ram type:				
Up to and including 1".....	368	1,061	1,937	7,468
Over 1".....	658	4,025		
Saddle type.....	334	3,846	723	5,483
Automatic chucking lathes:				
Single-spindle.....	282	2,360		
Multi-spindle.....	297	6,531	2,877	18,609
Automatic between-center lathes.....	520	4,706		
Automatic screw (bar) machines.....	3,341	20,851		
Other lathes (including axle, crankshaft, shell, spinning, boring, and combination boring and turning lathes, etc.).....	506	8,604	n.a.	2,428
Lathes, not reported by type.....	n.a.	862		
Milling machines (including light industrial types).....	7,504	33,278	n.a.	24,223
Bench and hand milling machines:				
Average value under \$500.....	582	210		
Average value \$500 and over.....	783	1,578		
Knee type milling machines (except bench type):				
Horizontal plain.....	860	4,307	(¹)	(¹)
Horizontal universal.....	872	5,708		
Vertical.....	2,287	4,291		
Bed type milling machines:				
Single-spindle.....	365	3,756		
Double-spindle and special purpose.....	170	3,233	126	2,136
Planer type milling machines.....	20	1,240	(¹)	(¹)
Profiling machines, duplicators, and die-sinking machines.....	300	1,625	206	1,067
Thread milling machines.....	79	789		
Other milling machines (including spline, routers, cam, engraving and ram type, swivel head milling machines) and milling machines, not reported by type.....	1,186	8,541	(¹)	(¹)

TABLE 6.—QUANTITY AND VALUE OF PRODUCTS, TOTALS FOR THE UNITED STATES: 1947 AND 1939—Continued

PRODUCT	1947		1939	
	Total shipments and interplant transfers		Total production for sale and interplant transfer	
	Number of units	Value f.o.b. plant	Number of units	Value f.o.b. plant
Other machine tools, except those designed primarily for home workshops, laboratories, garages, service shops, and model makers.....	n.a.	\$108,208	n.a.	\$32,562
Broaching machines.....	284	2,132	470	2,296
Internal broaching machines, horizontal and vertical.....	248	2,824	(8)	(8)
Other broaching machines.....	70	266		
Centering machines.....	282	409	402	81
Keyseating machines.....				
Planers:	81	1,004	50	903
Openside.....	71	2,024	102	3,522
Other planers (including double housing, plate, pit, etc.).....				
Shapers (except gear shapers), horizontal crank type:	702	2,002		
Under 20" stroke.....	796	3,156	1,103	1,803
20"-27" stroke (inclusive).....	289	1,722		
28" stroke and over.....	31	379	(9)	(9)
Slotting machines (except screw and nut slotters).....				
Sawing and cut-off machines:	n.a.	802		
Abrasive cut-off saws.....	4,305	2,027	1,585	859
Power hack saws.....	3,129	2,702		
Other sawing and cut-off machines.....	9,400	4,350	n.a.	318
Contour sawing and filing machines (including band saws).....	n.a.	2,812	623	707
Tapping machines.....				
Threading machines (except thread milling machines or thread grinding machines):	17,000	5,015	n.a.	1,073
Pipe threading.....	618	2,363	341	608
Other threading machines (including bolt threading).....				
All other machine tools ⁹	n.a.	23,676	n.a.	10,009
Parts for machine tools, sold separately.....		47,403		10,173
Machine tools designed primarily for home workshops, laboratories, garages, service shops and model makers (except power-driven hand tools) ⁸		30,881		
Drilling machines.....	120,740	0,492		
Grinding and polishing machines.....	399,251	7,103	(10)	(10)
Lathes.....	48,402	5,037		
Other machine tools designed primarily for home workshops, etc.....	124,007	7,011		
Parts, attachments and accessories.....		4,248		
Rebuilt machine tools ¹¹		10,780		4,702
Machine tools, not reported by type.....		4,400		
Rolling-mill machinery and equipment ¹¹		96,074		34,005
Metalworking presses, except forging presses.....		94,606		15,742
Hydraulic (except manual).....	3,532	14,403		
Pneumatic (except manual).....	n.a.	253		
Mechanical (except manual).....	18,300	77,901		n.a.
Manual (including arbor, straightening, forcing, and assembly).....	10,314	1,070		
Metalworking presses, not reported by kind (except forging).....		913		
Power-driven hand tools ¹²		112,198		n.a.
Electric (including high cycle):				
Drills:				
3/4-inch chuck size and smaller.....	745,230	12,720		
1/2-inch chuck size.....	280,975	9,352		
3/8-inch chuck size and larger.....	30,051	2,550		
Saws (excluding chain saws).....	105,772	13,106		
Disc sanders.....	60,047	3,495		
Grinders.....	117,142	3,811		
Hammers.....	13,950	1,394		
Other electric power-driven hand tools, including screw drivers, nutrunners, portable polishers, riveters, and refacers.....		14,095		
Pneumatic:			n.a.	n.a.
Drills.....	30,481	4,222		
Saws (excluding chain saws).....	270	50		
Disc sanders.....	n.a.	927		
Grinders.....	30,919	3,304		
Hammers.....	42,798	3,240		
Other pneumatic power-driven hand tools, including screw drivers, nutrunners, portable polishers, riveters, and refacers.....		0,237		
Parts, attachments, and accessories for power-driven hand tools, sold separately.....		20,100		
Power-driven hand tools not reported by type, and powder-actuated hand tools.....		1,484		
Other metalworking machinery.....		181,593		n.a.
Drawing machines and draw benches.....		10,103		n.a.
Machines for weaving and other wire fabricating (barbed wire, poultry netting, woven-wire fence machines, etc.).....		6,081		n.a.
Bending and forming machines:				
Pipe and structural shape bending.....		1,856		
Plate-bending.....	1,323	0,793		n.a.
Roll-forming.....		5,357		
Other bending and forming machines, including sheet metal.....		8,233		
Die-casting machines.....	397	4,240	n.a.	537
Shearing machines, power:				
Straight.....	3,525	10,402	588	1,376
Other power shearing machines.....	782	2,150	n.a.	640
Forging machines (including forging presses):				
Hammers.....	588	4,344	143	1,775
Forging presses.....	207	3,240	n.a.	688
Other forging machines (bulldozers, headers, upsetters, etc.).....	615	0,904	n.a.	2,655
Metal can-making machines.....	2,540	16,278	n.a.	n.a.
Riveting machines (except hand-held portable type).....		3,340		795
Welding and cutting apparatus, acetylene.....		26,777		3,809
Other metalworking machinery (except machine tools).....		30,009		n.a.
Rebuilt metalworking machinery (except machine tools) ¹¹		445		n.a.
Parts for metalworking machinery (except machine tools), sold separately.....		33,310		110,656
Metalworking machinery (except machine tools), not reported by type.....		7,043		

See footnotes at end of table.

TABLE 6.—QUANTITY AND VALUE OF PRODUCTS, TOTALS FOR THE UNITED STATES: 1947 AND 1939—Continued

PRODUCT	1947		1939	
	Total shipments and interplant transfers		Total production for sale and interplant transfer	
	Number of units	Value f.o.b. plant	Number of units	Value f.o.b. plant
Jigs, fixtures, etc.		\$314,515		¹⁵ \$81,326
Jigs; fixtures; forming, stamping, and piercing punches and dies; die sets; subpresses; special checking fixtures, etc.; and specially designed tools.....		271,041		n.a.
Stamping tools and dies made in establishments primarily engaged in producing stampings ¹⁶		43,474		n.a.
Small cutting tools for machine tools and metalworking machinery		204,233		n.a.
Broaches:				
High-speed steel.....		9,451		
Carbide tipped.....		751		2,731
Drills:				
Carbon steel.....		7,344		2,484
High-speed steel.....		32,461		9,972
Carbide tipped.....		896		n.a.
Reamers:				
Carbon steel.....		2,569		857
High-speed steel.....		10,408		2,837
Carbide tipped.....		2,148		n.a.
Gear hobs:				
Unground.....		1,638		
Ground.....		4,625		3,12
Gear cutters, other than hobbing.....		7,832		2,351
Milling cutters:				
Multiple thread-milling cutters.....		4,639		
Other form relieved cutters.....		2,704		
Solid-end mills.....		3,733		
Inserted blade cutters (including blades sold separately):				
High-speed steel.....		3,837		
Carbide tipped.....		3,834		7,995
Other solid-milling cutters:				
High-speed steel.....		8,072		
Carbide tipped.....		2,003		
Turning, planer, and shaper tools:				
Form tools:				
High-speed steel.....		3,930		
Carbide tipped.....		9,158		
Other turning, planer, and shaper tools:				2,992
High-speed steel.....		2,173		
Carbide tipped.....		4,321		
Threading tools and dies:				
Ground-thread taps.....		12,918		
Cut-thread taps—carbon steel.....		4,311		5,940
Cut-thread taps—high-speed steel.....		4,801		
Dies.....		7,746		2,583
Chasers.....		6,971		3,056
Pipe stocks complete with dies.....		2,719		1,541
Drop-forging dies.....		4,502		(¹¹)
Die-casting dies.....		8,366		2,093
Other small cutting tools for machine tools and metalworking machinery.....		20,477		n.a.
Small cutting tools for machine tools and metalworking machinery, not reported by type.....		2,895		n.a.
Precision measuring tools		33,825		5,579
Comparators.....		1,497		
Gage blocks.....		687		
Micrometers.....		4,249		
Calipers and dividers.....		1,270		n.a.
Gages.....		14,370		
Dial indicators.....		2,595		
Other machinists' precision tools.....		9,147		
Other metalworking accessories		77,656		n.a.
Chucks:				
Drill.....		6,139		1,374
Latho.....		7,378		2,393
Other chucks.....		2,771		564
Chuck-holding devices (including feeding fingers, collets, sleeves, sockets, and drill heads).....		6,870		n.a.
Tools for screw and automatic machines, except taps and dies (including box tools, hollow-drills, and work and tool holders).....		10,641		4,630
Other accessories and attachments for machine tools and metalworking machinery (except small cutting tools), and those not reported by type.....		35,357		n.a.
Toolroom specialties (including levels, angle irons, plates, squares, sine bars, V-blocks, flats, and vises).....		8,500		n.a.
Cutting tools, jigs, fixtures, etc., not reported by type.....		45,022		

n.a.—Not available.

¹ Number of spindles.² Not collected separately in 1939. Included with other drilling machines.³ Includes radial drilling machines other than plain types which in 1947 are included with other drilling machines.⁴ Not collected separately in 1939. Included with other grinding machines.⁵ Excludes some automotive service equipment designed primarily for repairing motor vehicles and shipped to automotive service stations.⁶ Not collected separately in 1939. Included with other lathes.⁷ Data for bench, hand, knee type, bed type, etc., milling machines not collected separately in 1939. Included with other milling machines. The value of production of other milling machines in 1939 was \$21,000,000.⁸ Not collected separately in 1939. Included with other machine tools.⁹ Includes rifle working machines; chamfering machines; facing machines; automatic roller cut-off machines; special drilling and tapping machines; horizontal processing machines; special transfer machines; special cylinder block facing machines; shapers other than horizontal crank type; special axle-end-facing machines, etc., and other specially designed machines involving combinations of two or more processes, such as boring, reaming, drilling, facing, turning, and counterboring.¹⁰ Data on machine tools designed primarily for home workshop, laboratories, etc., not collected separately in 1939. These tools are included to a large extent in the corresponding classifications of machine tools, other than home workshop, etc.¹¹ Data on rebuilt machine tools and other metalworking machinery do not include machinery rebuilt by nonmanufacturing establishments such as repair shops, etc.¹² Includes all equipment such as rolling mill stands, rolls, rollers, shears, coilers, uncoilers, etc., which are designed for and form an integral part of rolling mills.¹³ Includes tools which are controlled by hand and the position of which in operation need not be fixed.¹⁴ In 1939, parts for power-driven hand tools were included with parts for metalworking machinery.¹⁵ In 1939, drop forging dies were included with jigs, fixtures, etc.¹⁶ This item includes only those tools and dies the cost of which was borne directly by the company for which the tool or die was made, whether delivered to that company or kept in the stamping establishment where produced.

CENSUS OF MANUFACTURES: 1947

TABLE 7.—SELECTED MATERIALS CONSUMED, BY KIND: 1947

[The table below summarizes the consumption of selected metal shapes by manufacturers during 1947. For each shape, manufacturing establishments were required to report consumption, in quantity and cost, provided that such usage during 1947 exceeded the following amounts: for iron castings, steel castings, each of six carbon steel shapes—50 short tons; for alloy steel bars and all other alloy steel—25 short tons; for stainless steel, brass and copper wire mill shapes, copper and brass castings, aluminum mill shapes and aluminum castings—10 short tons]

[Money figures in thousands of dollars]

Money figures in thousands

METAL SHAPE	MACHINE TOOLS INDUSTRY			METALWORKING MACHINERY, N.E.C., INDUSTRY			CUTTING TOOLS, JIGS, FIXTURES, ETC., INDUSTRY		
	Establishments consuming more than specified quantities								
	Number	Short tons	Cost	Number	Short tons	Cost	Number	Short tons	Cost
Iron castings, rough and semifinished	144	130,964	\$30,474	123	89,407	\$18,020	88	30,410	\$8,284
Steel castings, rough and semifinished	17	2,326	997	60	46,221	12,048	26	4,560	1,310
Steel mill shapes and forms	n.a.	59,629	9,848	n.a.	140,831	16,571	n.a.	96,217	22,521
Carbon steel:									
Bars and bar shapes	77	30,523	4,273	82	28,388	3,240	93	21,435	2,841
Sheet and strip	18	4,291	470	22	6,203	721	41	26,007	2,627
Structural shapes	6	3,464	302	26	5,502	552	7	789	72
Plates	12	3,159	319	60	77,500	6,776	53	27,501	2,478
Wire				(1)	416	230	(1)	481	124
All other mill shapes and forms	5	1,314	198	11	9,072	1,099	6	2,232	324
Alloy steel, except stainless:									
Bars and bar shapes	50	15,787	3,707	46	8,994	2,032	92	10,734	13,455
All other mill shapes and forms	8	1,005	501	10	4,381	1,538	7	778	346
Stainless steel	(1)	81	78	11	375	383	10	200	253
Copper and copper-base alloy:									
Brass and wire mill shapes and forms	7	145	104	30	2,634	1,826	11	699	482
Castings, rough and semifinished	24	776	778	39	3,029	2,392	7	380	274
Aluminum:									
Aluminum mill shapes	(1)	(d)	(d)	5	356	283	10	883	594
Castings, rough and semifinished	16	609	549	22	2,304	3,055	6	99	113

n.a.—Not available.

^d Withheld to avoid disclosing figures for individual companies.

¹ Less than 5 establishments.

TABLE 8.—NUMBER OF ESTABLISHMENTS PERFORMING SELECTED METALWORKING OPERATIONS: 1947

[The figures in the table represent the number of establishments maintaining the metalworking operation specified, according to the usual number of production worker employed in the operation during 1947]

METALWORKING OPERATION	MACHINE TOOLS INDUSTRY						METALWORKING MACHINERY, N.E.C., INDUSTRY						CUTTING TOOLS, JIGS, FIXTURES, ETC., INDUSTRY					
	Number of establishments performing selected metalworking operations																	
	Total	Distribution by number of production workers in the operation					Total	Distribution by number of production workers in the operation					Total	Distribution by number of production workers in the operation				
		1-4	5-19	20-49	50-99	100 and over		1-4	5-19	20-49	50-99	100 and over		1-4	5-19	20-49	50-99	100 and over
Foundry-----	19	3	1	6	1	8	22	4	3	7	3	5	22	10	6	1	3	2
Die casting-----	3	2	1				3	2		1			22	16	5	1		
Forging—presses, hammers, or upsetters-----	10	7	3				24	11	10	2	1		43	31	9	3		
Electroplating-----	12	8	4				6	4	2				22	19	2	1		
Galvanizing and other hot dip coating-----	1	1					5	5					7	7				
Heat treating or annealing of metals-----	85	52	21	7	3	2	101	72	24	5			301	301	48	8	1	3
Automatic screw machine department-----	55	27	14	7	3	4	50	30	10	7	2	1	147	90	41	13	1	2
Machine shop-----	256	30	56	53	42	75	285	36	79	61	47	62	1,507	500	605	255	76	62
Tool and die room-----	75	26	27	13	5	4	90	35	32	15	6	2	960	308	424	177	35	16
Pattern shop-----	69	38	24	5	2		64	40	18	5	1		40	34	11	1		
Plate or structural fabrication-----	24	13	7	2	1	1	71	33	22	0	4	6	95	68	19	4	2	2
Stamping, blanking, forming, or drawing-----	23	15	6		1	1	50	31	13	5	1		538	377	131	21	7	2

NOTE: In the Machine Tools Industry 49 establishments did not answer this inquiry. Of these, 40 had fewer than 20 employees; 6 had between 20 and 99 employees, and 3 had 100 or more employees. In the Metalworking Machinery, n.e.c., Industry, 123 establishments did not answer this inquiry. Of these, 108 had fewer than 20 employees; and 15 had between 20 and 99 employees. In the Cutting Tools, Jigs, Fixtures, etc., Industry, 1,244 establishments did not answer this inquiry. Of these, 1,202 had fewer than 20 employees; 37 had between 20 and 99 employees, and 5 had 100 or more employees.

SPECIAL-INDUSTRY MACHINERY

This report shows the 1947 Census of Manufactures statistics for establishments primarily engaged in the production of special-industry machinery (except metalworking machinery) such as food-products machinery, textile machinery, woodworking machinery, paper-industries machinery, printing-trades machinery, etc. These establishments have been classified in six industries described separately below.

Special-industry machinery and equipment includes only those types of machinery and equipment which are designed especially for use in a specific industry or group of industries, such as the printing-trades industry, woodworking, textiles, glassmaking, rubberworking, etc. Products which have general industrial application, i.e., are used in a number of industries, are classified as general industrial machinery and equipment and are not included in this report but in the report for General Industrial Machinery and Equipment. Examples of general industrial machinery are pumps, compressors, conveyors, bearings, fans, and blowers.

Special-industry machinery is sometimes produced by the same company that uses the machinery on its production lines. If the machinery is manufactured at a separate plant of the company, the machinery is reported in the census and is included in the tables which follow. However, no data are included for machinery made for installation in the plants in which manufactured.

Food-Products Machinery (*Standard Industrial Classification No. 3551.*)—This industry comprises establishments primarily engaged in manufacturing machinery for use by the food-products and beverage manufacturing industries in the preparation, canning, or packaging of food products. Important products of this industry include bakers' machinery and equipment (bake ovens, bread-slicing machines, wrapping machines, and dough mixers); canning machinery; chocolate and confectionery machinery; dairy products machinery and equipment, including fluid milk processing machinery, butter, cheese, and ice cream machinery, condensed and evaporated milk machinery, and related equipment; flour-mill and grain-mill machinery; packing-house machinery; sugar-mill machinery; coffee-roasting and grinding machines, food choppers, grinders, mixers, and slicers; peanut roasters; popcorn machines; and parts and attachments. Establishments primarily engaged in manufacturing refrigeration machinery are classified in Industry 3585.

In the 1939 census, establishments primarily engaged in the production of milking machines and farm-size cream separators were classified in this industry. In accordance with the Standard Industrial Classification, the 1947 census classifies these items in Industry 3522, Agricultural Machinery (Except Tractors). The reports for 1939 have been retabulated on a basis comparable with 1947. Comparable data for earlier years, however, are not available.

In table 6, data for commercial food preparation machines such as slicers, choppers, and tenderizers, etc., for use by hotels, restaurants, institutions, meat markets, butcher shops, food-products shops, and similar commercial organizations are shown separately from industrial food-products machinery, such as meat and poultry packing plant machinery and equip-

ment, dairy and milk products plant machinery, bakery machinery and equipment, etc.

Of the total value of \$335 million of food-products machinery, 18 percent was shipped by establishments classified in other industries. Establishments classified in the Food-Products Machinery Industry shipped \$274 million of food-products machinery and \$34 million of other products such as metal tanks, chemical industry machinery, etc.

Textile Machinery (*Standard Industrial Classification No. 3552.*)—This industry comprises establishments primarily engaged in manufacturing machinery for the textile industries. Important products of this industry include: (1) fiber-to-fabric machinery, such as picker, carding, combing, garnetting, and spinning machines, doubling and twisting frames, winders, and beaming, warping, and slashing machines; (2) fabric machinery, such as knitting and braiding machines, looms for weaving, and Jacquard, lace, net embroidery, cordage, and rope machines; (3) machinery for bleaching, dyeing, printing, mercerizing, finishing, and drying stock, yarn, and cloth; and (4) extra parts, attachments, and accessories, not elsewhere classified. Establishments primarily engaged in manufacturing domestic or industrial sewing machines are classified in Industry 3583.

Woodworking Machinery (*Part of Standard Industrial Classification No. 3553.*)—This industry comprises establishments primarily engaged in manufacturing machinery for sawmills, planing mills, cabinet and furniture makers, pattern makers, and veneer workers; and small woodworking machinery for home, shop, and professional craftsmen. Establishments primarily engaged in manufacturing hand tools such as planes, axes, drawknives, and hand saws are classified in Group 342.

According to the Standard Industrial Classification, portable electric woodworking tools are classified in this industry. However, the 1947 census includes portable electric woodworking tools in Industry 3542, "Metalworking Machinery, N.E.C.," since there is no clear distinction between portable electric tools for woodworking and for metalworking. The reports for 1939 have been retabulated on a basis comparable with 1947. Data for earlier years, however, are not available.

Separate data are shown in table 6 for woodworking machinery designed primarily for use in home workshops, laboratories, service shops, and the like. Only those machines designed primarily for woodworking are classified in this industry. Home workshop machines designed for use on both wood and metal are classified in Industry 3541, "Machine Tools."

Of the total value of \$151 million of woodworking machinery, 26 percent was shipped by establishments classified in other industries. Establishments classified in the Woodworking Machinery Industry shipped \$112 million of woodworking machinery and \$29 million of other products such as gray-iron castings, machine tools, other metalworking machinery, farm machinery, etc.

Paper-Industries Machinery (*Standard Industrial Classification No. 3554.*)—This industry comprises establishments primarily engaged in manufacturing machinery for the pulp, paper, and paper-products industries. Establishments primarily engaged in manufacturing printing-trades machinery are classified in Industry 3555.

Printing-Trades Machinery (*Standard Industrial Classification No. 3555.*)—This industry comprises establishments primarily engaged in manufacturing machinery and equipment used by the printing and bookbinding trades. Important products of this industry include bookbinding and photoengraving machinery; printers' machinery such as presses, typesetting, typefounding, electrotyping, and stereotyping machines; en-

gravers' equipment (metal plates, wood blocks, and lithographic stones); printers' rollers, rules, sticks, blocks, and type cases; and type, leads, and slugs. Establishments primarily engaged in manufacturing textile-printing machinery are classified in Industry 3552.

Special-Industry Machinery, Not Elsewhere Classified (*Standard Industrial Classification No. 3559 and Part of 3998.*)—This industry comprises establishments primarily engaged in manufacturing special-industry machinery, not elsewhere classified, such as smelting and refining equipment, cement-making, clay-working, cotton-ginning, glass-making, hat-making, incandescent lamp-making, leather-working, paint-making, rubber-working, tobacco-working, cigar and cigarette-making, shoe-making, and stone-working machinery.

According to the Standard Industrial Classification, patterns and molds for use in foundries, glass-making plants, plastic-working plants, etc., are classified in Industry 3998, "Models and patterns (except paper patterns)." The 1947 census includes these patterns and molds in this industry since their general nature and use are so closely related to industrial machinery. In fact a large part of these products is made in "captive" departments of foundries and machinery establish-

ments. However, the establishments producing such patterns and molds have certain characteristics which differentiate them from those producing special-industry machinery and equipment other than patterns and molds. In tables 1 and 4 separate general statistics are presented for establishments primarily engaged in making patterns and molds and for those making other types of special-industry machinery.

In the 1939 census, establishments primarily engaged in the production of industrial patterns and molds were classified in the industry for "Models and patterns (except paper patterns)." In addition, some types of industrial machinery included in this industry in 1947 were classified as general industrial machinery in 1939. The reports for 1939 have been retabulated on a basis comparable with 1947. Comparable data for earlier years, however, are not available.

Of the total value of \$540 million of special-industry machinery, 21 percent was shipped by establishments classified in other industries. Establishments classified in the Special-Industry Machinery, N.E.C. Industry shipped \$427 million of special-industry machinery and \$94 million of other products such as tools, jigs, and fixtures; valves and fittings for piping systems; industrial process instruments, etc.

TABLE 1.—GENERAL STATISTICS FOR THE UNITED STATES: 1947 AND EARLIER CENSUS YEARS

[Money figures in thousands of dollars. For explanation of column captions see GENERAL EXPLANATIONS]

INDUSTRY AND CENSUS YEAR	Number of establishments	All employees		Production and related workers		Value added by manufacture ¹	Cost of materials, fuel, electricity, and contract work ²	Value of products shipped ³
		Number (average for the year) ⁴	Salaries and wages, total	Number (average for the year) ⁵	Wages, total			
Food-products machinery:								
1947.....	622	36,839	\$113,506	28,820	\$82,062	\$101,214	\$135,202	\$320,416
1939 ⁶	406	n.a.	n.a.	14,155	18,031	58,587	33,082	91,069
1937 ⁷	323	n.a.	n.a.	18,475	26,670	74,781	30,301	114,082
Textile machinery:								
1947.....	489	53,583	158,446	45,393	126,142	256,436	146,940	403,386
1939 ⁶	339	n.a.	n.a.	22,580	28,401	82,033	34,876	90,009
1937 ⁷	356	29,161	42,560	25,340	33,139	71,883	35,540	107,429
1935.....	349	22,082	29,731	10,072	21,240	45,715	23,131	68,840
1933.....	314	21,281	23,855	18,576	18,737	41,945	18,378	60,323
1931.....	330	n.a.	n.a.	18,808	21,238	47,623	18,175	65,798
1929.....	376	31,263	50,497	27,010	37,930	85,883	36,556	122,439
1927.....	367	30,220	47,398	20,154	30,481	80,740	30,181	116,021
1925.....	379	32,329	49,003	27,860	37,464	82,010	30,037	121,053
1923.....	428	40,041	57,086	35,672	40,023	90,055	49,706	140,061
1921.....	421	34,469	47,129	31,025	38,831	84,031	44,004	128,935
1919 ⁸	432	35,772	44,627	31,823	30,520	76,452	45,637	122,089
Woodworking machinery:								
1947.....	294	15,642	48,707	12,623	35,332	86,360	58,966	145,326
1939 ⁶	148	n.a.	n.a.	3,649	4,683	12,677	7,783	20,400
Paper-industries machinery:								
1947.....	149	17,088	57,749	13,398	41,523	81,368	60,727	151,085
1939 ⁶	116	n.a.	n.a.	5,570	7,084	20,108	13,017	35,215
1937 ⁷	91	n.a.	n.a.	0,813	10,861	24,391	19,015	48,406
Printing-trades machinery:								
1947.....	326	24,752	84,333	19,584	62,610	131,025	67,138	198,793
1939 ⁶	254	n.a.	n.a.	9,564	14,003	41,137	15,419	56,656
1937.....	230	17,191	29,851	13,716	22,378	57,062	20,966	78,028
1935.....	238	12,935	20,484	9,884	13,582	38,429	13,131	51,560
Special-industry machinery, n.e.c.:								
1947, total.....	2,226	68,063	223,035	53,768	164,688	348,565	202,434	550,999
Patterns and molds (of metal, wood, etc.) for foundries, glass-making plants, plastic-working plants, etc.	1,042	9,660	35,927	8,770	31,083	55,905	13,605	69,510
Special-industry machinery, n.e.c. (except patterns and molds)	1,184	58,403	187,108	44,998	133,605	292,660	188,829	481,489
1939 ⁶	976	n.a.	n.a.	21,728	32,431	73,601	30,150	112,787

n.a.—Not available.

¹ Value of products less cost of materials, supplies, fuel, electricity, and contract work.

² Figures for years prior to 1935 do not include cost of contract work.

³ For 1947 and 1929, value of products shipped; for all other years, value of products made. See GENERAL EXPLANATIONS—Value added by manufacture.

⁴ The returns for 1939 have been retabulated to provide figures comparable with those for 1947. For "Food-products machinery," value added for 1939 before retabulation and on a basis comparable with 1937, was \$68.9 million. No comparable figures are available prior to 1939 for "Woodworking machinery" or "Special-industry machinery, n.e.c."

⁵ "Food-products machinery" and "Paper-industries machinery" were not shown as separate industries prior to 1937, but were included with the industry formerly designated "Machinery, n.e.c."

⁶ Revised.

⁷ The figures for "Textile machinery" for 1937 and earlier years are not entirely comparable with those for later years because they include data for establishments reporting roll covering or re-covering as their major activity. Figures for 1937 include 44 such establishments having \$1.1 million total value of products.

⁸ "Textile machinery" was not shown as a separate industry prior to 1919, but was included with the industry formerly designated "Foundry and machine shop products."

⁹ Prior to 1935, "Printing-trades machinery" was included among the three discontinued industries "Printers' supplies," "Engravers' materials," and "Foundry and machine shop products." Separate figures are, therefore, not available for earlier years.

SPECIAL-INDUSTRY MACHINERY

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TABLE 2.—GENERAL STATISTICS BY DIVISIONS AND STATES: 1947

[Money figures and man-hours in thousands. For explanation of column captions see GENERAL EXPLANATIONS]

INDUSTRY, DIVISION, AND STATE	Number of establishments	All employees		Production and related workers			Value added by manufacture	Cost of materials, fuel, electricity, and contract work	Value of products shipped	Expenditures for new plant and equipment
		Number (average for the year)	Salaries and wages, total	Number (average for the year)	Man-hours, total	Wages, total				
Food-products machinery, total ¹	622	36,839	\$113,506	28,826	62,099	\$82,062	\$191,214	\$135,202	\$326,416	\$12,323
New England.....	25	841	2,486	660	1,467	1,840	4,953	4,078	9,031	147
Connecticut.....	5	276	994	188	433	642	1,380	1,370	2,750	29
Middle Atlantic.....	146	8,210	28,303	7,254	15,813	20,476	46,892	32,052	78,944	1,950
New York.....	94	6,219	19,373	4,898	10,742	13,957	31,629	20,313	51,942	1,359
New Jersey.....	17	669	2,316	518	1,241	1,707	3,325	3,553	6,878	120
Pennsylvania.....	35	2,322	6,614	1,838	3,830	4,812	11,938	8,186	20,124	477
East North Central.....	197	14,377	44,750	11,385	24,915	32,664	75,919	54,077	129,996	3,973
Ohio.....	42	2,803	9,210	2,360	4,863	6,281	18,932	13,658	32,590	468
Indiana.....	25	1,209	3,994	1,072	2,303	3,165	6,326	3,472	9,798	241
Illinois.....	70	5,788	18,374	4,378	9,780	13,292	28,544	22,079	50,623	2,196
Michigan.....	22	579	1,935	473	994	1,378	2,948	1,824	4,772	213
Wisconsin.....	38	3,878	11,237	3,096	6,975	8,548	19,169	13,044	32,213	855
West North Central.....	70	4,336	12,719	3,258	7,067	8,780	22,814	16,632	39,446	1,310
Minnesota.....	20	793	2,639	581	1,293	1,692	5,336	3,546	8,882	426
Iowa.....	15	1,303	3,468	1,004	2,078	2,472	5,427	4,820	10,247	391
Missouri.....	22	1,703	5,110	1,212	2,626	3,381	8,803	5,886	14,689	228
Kansas.....	9	383	1,073	323	766	851	2,294	1,896	4,190	229
South Atlantic.....	28	2,913	8,914	2,241	4,906	6,486	13,162	9,494	22,656	(d)
Maryland.....	15	2,087	6,725	1,717	3,784	5,242	9,380	7,453	16,833	(d)
East South Central.....	8	196	453	154	314	350	638	660	1,298	27
Kentucky.....	4	141	361	107	224	273	501	377	878	17
West South Central.....	20	483	1,235	385	764	885	1,840	1,310	3,150	(d)
Mountain.....	9	466	1,290	379	684	954	1,902	1,882	3,784	(d)
Pacific.....	119	4,017	13,355	3,100	6,169	9,627	23,094	15,017	38,111	1,096
Washington.....	8	148	562	117	227	407	902	424	1,326	82
California.....	106	3,827	12,653	2,956	5,885	9,144	21,921	14,452	36,373	1,002
Textile machinery, total ¹	489	53,583	158,446	45,393	98,607	126,142	256,436	146,949	403,385	13,692
New England.....	197	33,430	95,323	28,416	61,060	77,033	146,839	88,776	235,615	8,326
Massachusetts.....	119	20,169	58,071	17,333	37,693	47,683	87,914	57,584	145,498	4,907
Rhode Island.....	44	3,660	10,716	2,778	6,147	7,615	16,524	9,697	26,221	1,530
Connecticut.....	14	1,375	3,855	1,176	2,398	3,038	6,808	3,358	10,166	83
Middle Atlantic.....	174	14,790	47,817	12,500	27,424	37,061	81,638	43,324	124,962	3,643
New York.....	55	2,054	6,541	1,724	3,642	4,791	11,094	6,720	17,814	265
New Jersey.....	60	2,515	8,306	2,134	4,682	6,552	16,088	10,250	26,338	648
Pennsylvania.....	59	10,221	32,970	8,642	19,100	25,718	54,456	26,354	80,810	2,730
North Central.....	26	2,038	6,522	1,662	3,743	5,163	11,674	4,742	16,416	509
Ohio.....	7	738	2,443	635	1,349	1,933	4,031	1,437	5,468	122
South Atlantic.....	77	2,990	7,843	2,537	5,745	6,133	15,060	9,380	24,440	1,186
North Carolina.....	41	1,048	2,742	866	1,991	2,023	5,288	2,786	8,074	600
Georgia.....	18	747	1,982	660	1,479	1,536	3,943	2,609	6,552	235
East South Central.....	8	297	779	250	568	661	930	544	1,474	20
Pacific.....	7	38	162	28	67	91	295	183	478	8
Woodworking machinery, total ¹	294	15,642	48,707	12,623	27,219	35,332	86,360	58,966	145,326	4,403
New England.....	25	1,451	4,504	1,148	2,557	3,296	7,872	5,799	13,671	162
Massachusetts.....	14	1,247	3,979	968	2,162	2,850	7,157	4,382	11,539	150
Middle Atlantic.....	36	2,214	6,874	1,734	3,680	4,846	11,434	7,040	18,474	473
New York.....	18	869	2,579	638	1,294	1,672	3,798	2,390	6,188	148
New Jersey.....	4	547	1,778	450	930	1,308	2,739	1,337	4,076	99
Pennsylvania.....	14	798	2,517	646	1,456	1,866	4,897	3,313	8,210	226
East North Central.....	89	7,439	24,304	5,966	13,064	17,798	44,040	29,918	73,958	2,739
Ohio.....	15	1,566	4,597	1,077	2,305	3,246	9,216	6,532	17,748	582
Indiana.....	13	546	1,877	428	896	1,174	3,605	4,314	7,919	716
Illinois.....	22	1,388	4,848	1,146	2,597	3,638	9,120	5,067	14,187	552
Michigan.....	24	2,494	7,956	1,976	3,997	5,789	14,007	7,720	21,727	526
Wisconsin.....	16	1,655	5,226	1,339	3,269	3,951	8,092	4,285	12,377	363
West North Central.....	17	725	1,887	607	1,276	1,433	3,815	3,445	7,260	204
Minnesota.....	9	317	988	270	615	762	1,743	1,845	3,588	86
South Atlantic.....	16	848	2,169	743	1,558	1,411	4,371	3,773	8,144	219
East South Central.....	20	767	2,043	625	1,398	1,342	3,220	2,320	5,540	113
Tennessee.....	9	327	841	259	557	484	1,545	845	2,390	66
Alabama.....	3	125	315	100	217	227	496	299	796	8
West South Central.....	14	244	633	218	501	582	1,064	617	1,681	30
West.....	77	1,954	6,293	1,582	3,185	4,644	10,544	6,054	16,598	463
Washington.....	17	880	2,246	566	1,096	1,685	3,852	2,260	6,112	182
California.....	38	678	2,046	500	1,045	1,409	3,680	1,819	5,479	165
Paper-industries machinery, total ¹	149	17,088	57,749	13,398	29,782	41,523	81,358	69,727	151,085	6,114
New England.....	41	4,327	13,788	3,424	7,706	9,939	22,093	15,941	38,034	1,955
New Hampshire.....	7	792	2,609	611	1,358	1,747	5,738	4,118	9,856	352
Massachusetts.....	25	2,573	8,295	2,014	4,607	5,866	13,635	9,511	23,146	1,350
Middle Atlantic.....	60	6,108	20,921	4,702	10,345	14,692	28,156	23,741	51,897	1,366
New York.....	38	3,861	13,338	2,973	6,579	9,440	16,440	12,449	28,889	735
New Jersey.....	7	922	3,264	726	1,581	2,303	5,430	4,298	9,728	127
Pennsylvania.....	15	1,325	4,319	1,003	2,185	2,949	6,286	5,994	13,280	494
North Central.....	39	4,917	17,372	3,858	8,782	12,679	21,921	25,509	47,430	2,114
Ohio.....	11	6,140	2,140	2,670	8,264	8,873	8,128	8,693	16,821	1,338
Wisconsin.....	13	2,694	9,588	2,184	5,254	7,539	11,807	15,890	27,197	603
South Atlantic.....	3	1,414	4,646	1,129	2,395	3,345	7,475	3,906	11,381	(d)
Pacific.....	6	322	1,024	285	554	868	1,713	630	2,343	(d)

See footnotes at end of table.

CENSUS OF MANUFACTURES: 1947

TABLE 2.—GENERAL STATISTICS BY DIVISIONS AND STATES: 1947—Continued

INDUSTRY, DIVISION, AND STATE	Number of establishments	All employees		Production and related workers			Value added by manufacture	Cost of materials, fuel, electricity, and contract work	Value of products shipped	Expenditures for new plant and equipment
		Number (average for the year)	Salaries and wages, total	Number (average for the year)	Man-hours, total	Wages, total				
Printing-trades machinery, total¹	326	24,752	\$34,333	19,584	42,739	\$62,616	\$131,625	\$67,138	\$198,763	\$4,860
New England	29	2,273	7,433	1,826	3,962	5,487	10,292	5,067	16,259	363
Connecticut	8	1,295	4,780	992	2,318	3,302	6,397	3,088	10,085	126
Middle Atlantic	129	12,716	43,302	9,924	21,670	31,895	62,734	32,706	95,440	2,250
New York	81	7,769	26,590	5,891	12,755	18,853	35,067	18,046	51,013	1,413
New Jersey	24	2,848	10,322	2,302	5,111	7,819	16,912	9,249	26,161	368
Pennsylvania	24	2,099	6,390	1,731	3,804	5,023	10,755	4,511	15,266	469
East North Central	102	8,779	30,744	7,165	15,717	23,707	53,183	24,156	77,339	1,931
Ohio	24	2,242	7,714	1,867	4,195	6,125	16,984	6,406	23,300	310
Illinois	52	5,025	18,994	4,074	9,254	14,686	27,485	13,867	41,352	1,348
Michigan	10	916	2,332	772	1,341	1,740	5,176	1,916	7,092	161
West North Central	21	403	920	222	429	442	2,083	2,057	4,140	99
South Atlantic	14	126	383	101	233	262	650	398	1,048	98
East South Central	5	208	561	173	360	455	1,073	948	2,021	43
West South Central	7	48	120	29	58	57	456	273	729	(4)
Pacific	19	199	870	144	310	511	1,154	633	1,787	(4)
Special-industry machinery, n.e.c., total¹	2,226	68,063	223,035	53,768	114,160	164,688	348,565	202,434	550,999	19,921
New England	266	12,621	40,074	9,953	21,148	30,443	51,928	32,776	84,704	2,852
Massachusetts	147	7,225	22,362	5,648	11,870	16,725	27,104	13,708	40,812	1,741
Rhode Island	27	1,232	3,511	980	2,109	2,639	4,606	2,434	7,040	142
Connecticut	80	3,693	12,900	2,950	6,280	10,150	18,569	15,681	34,250	919
Middle Atlantic	578	15,924	53,959	12,455	26,868	38,864	78,328	45,373	123,701	3,698
New York	264	7,609	25,870	5,534	12,757	17,667	33,551	18,009	51,560	1,697
New Jersey	159	3,994	13,962	3,265	6,491	10,059	22,178	12,586	34,764	994
Pennsylvania	155	4,321	14,127	3,656	7,620	11,138	22,599	14,778	37,377	1,007
East North Central	910	26,808	92,980	21,310	45,423	68,157	162,965	86,837	240,802	8,808
Ohio	316	12,808	42,031	10,510	22,149	31,519	77,029	41,027	118,056	4,691
Indiana	68	2,283	7,732	1,680	3,559	5,190	13,842	8,191	22,033	1,050
Illinois	224	4,729	17,430	3,822	7,959	11,826	27,467	16,846	44,312	1,323
Michigan	213	3,993	16,412	3,407	7,198	13,122	32,082	10,541	42,623	1,267
Wisconsin	89	2,995	9,375	2,091	4,558	6,500	12,545	10,233	22,778	477
West North Central	98	2,311	6,938	1,910	3,801	5,160	10,347	5,563	15,910	379
Iowa	12	671	1,909	568	1,240	1,569	3,040	1,232	4,281	139
Missouri	48	1,119	3,542	890	1,617	2,423	5,136	2,430	7,566	136
South Atlantic	64	2,835	8,388	2,298	4,753	5,885	12,928	10,587	23,515	758
Maryland	13	199	620	156	342	446	1,031	656	1,687	43
Virginia	10	324	964	273	583	648	1,732	3,708	5,440	115
Georgia	14	1,121	3,072	845	1,725	1,858	5,404	3,173	8,577	405
East South Central	32	1,134	2,743	967	2,006	2,210	4,649	2,606	7,255	112
Kentucky	9	168	468	149	323	388	937	558	1,495	22
Tennessee	11	235	572	170	368	370	1,248	384	1,632	36
West South Central	45	2,071	5,693	1,655	3,498	4,125	9,064	7,226	16,290	730
Texas	30	1,710	4,881	1,368	2,863	3,536	7,911	6,738	14,649	629
West	233	4,359	12,280	3,220	6,663	9,844	18,350	11,466	29,822	2,584
Oregon	18	319	1,040	273	545	869	1,280	773	2,063	56
California	186	3,158	8,425	2,227	4,599	6,751	13,879	9,169	23,038	2,481

⁴ Withheld to avoid disclosing figures for individual companies.¹ For each producing State not shown separately in the table (see GENERAL EXPLANATIONS "Disclosure of Data for Individual Companies"), there are shown below the number of establishments and, in parentheses, the number of employees for States represented by three or more companies, when possible.**Food-products machinery:** New England, Maine, 1; New Hampshire, 1; Vermont, 2; Massachusetts, 15 (419); Rhode Island, 1; West North Central, South Dakota, 1; Nebraska, 3; South Atlantic, Delaware, 2; Virginia, 1; West Virginia, 1; North Carolina, 1; Georgia, 4 (248); Florida, 4 (406); East South Central, Tennessee, 2; Alabama, 2; West South Central, Arkansas, 1; Louisiana, 1; Oklahoma, 1; Texas, 17 (334); Mountain, Colorado, 5 (324); Arizona, 1; Utah, 3; Pacific, Oregon, 5 (42).**Textile machinery:** New England, Maine, 4 (5,305); New Hampshire, 12; Vermont, 4; North Central, Illinois, 6 (987); Michigan, 3 (47); Wisconsin, 2; Iowa, 2; Missouri, 1; Nebraska, 1; South Atlantic, Maryland, 1; Virginia, 3; South Carolina, 13 (1,085); Florida, 1; East South Central, Tennessee, 6; Alabama, 2; Pacific, California, 7 (38).**Woodworking machinery:** New England, Maine, 2; Vermont, 2; Rhode Island, 3 (19); Connecticut, 4 (49); West North Central, Iowa, 3; Missouri, 2; Kansas, 3 (184); South Atlantic, Maryland, 1; Virginia, 2; North Carolina, 8 (733); South Carolina, 1; Georgia, 2; Florida, 2; East South Central, Kentucky, 3 (10); Mississippi, 5 (296); West South Central, Arkansas, 1; Louisiana, 5 (179); Texas, 8; West, Colorado, 1; New Mexico, 1; Oregon, 20.**Paper-industries machinery:** New England, Maine, 2; Vermont, 2; Connecticut, 5 (364); North Central, Indiana, 5 (130); Illinois, 3 (94); Michigan, 3; Minnesota, 3 (207); Missouri, 1; South Atlantic, Delaware, 2; Maryland, 1; Pacific, Washington, 2; Oregon, 1; California, 3 (32).**Printing-trades machinery:** New England, Maine, 1; New Hampshire, 2; Massachusetts, 18 (445); East North Central, Indiana, 3 (13); Wisconsin, 13 (583); West North Central, Minnesota, 6 (263); Iowa, 1; Missouri, 10 (59); South Dakota, 1; Nebraska, 1; Kansas, 2; South Atlantic, Maryland, 7 (83); District of Columbia, 1; Virginia, 1; North Carolina, 1; Georgia, 3 (20); Florida, 1; East South Central, Kentucky, 2; Tennessee, 2; Mississippi, 1; West South Central, Louisiana, 1; Texas, 6; Pacific, Washington, 1; Oregon, 2; California, 16 (190).**Special-industry machinery, n.e.c.:** New England, Maine, 4 (45); New Hampshire, 5 (155); Vermont, 3 (271); West North Central, Minnesota, 31 (343); South Dakota, 1; Nebraska, 2; Kansas, 4 (158); South Atlantic, Delaware, 6 (736); West Virginia, 12 (191); North Carolina, 5 (148); Florida, 5 (116); East South Central, Alabama, 11; Mississippi, 1; West South Central, Louisiana, 5 (293); Oklahoma, 10 (68); West, Montana, 1; Colorado, 10 (811); Arizona, 2; Utah, 1; Washington, 15 (54).

SPECIAL-INDUSTRY MACHINERY

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TABLE 3.—DETAILED STATISTICS FOR THE UNITED STATES: 1947

[Money figures in thousands of dollars. For explanation of line captions see GENERAL EXPLANATIONS]

ITEM	Industry					
	Food-products machinery	Textile machinery	Woodworking machinery	Paper-industries machinery	Printing-trades machinery	Special-industry machinery, n.e.c.
ALL ESTABLISHMENTS						
Number of establishments.....	622	489	294	149	326	2,226
All employees.....						
Number (average for the year).....	36,839	53,583	15,642	17,088	24,752	68,063
Salaries and wages, total.....	\$113,506	\$158,446	\$48,707	\$57,749	\$84,333	\$223,035
Production and related workers.....						
Number (average for the year).....	28,826	45,393	12,623	13,398	19,584	53,768
Man-hours, total..... thousands.....	62,099	98,607	27,219	29,782	42,739	114,160
Wages, total.....	\$82,062	\$126,142	\$35,332	\$41,523	\$62,616	\$164,628
Value added by manufacture.....	\$191,214	\$256,436	\$86,380	\$81,358	\$131,625	\$348,565
ESTABLISHMENTS REPORTING DETAILED STATISTICS						
Number of establishments.....	489	474	257	149	227	1,618
All employees.....						
Number (average for the year).....	36,139	53,559	15,442	17,088	24,308	65,889
Salaries and wages, total.....	\$111,864	\$158,383	\$48,171	\$57,749	\$83,147	\$216,702
Production and related workers.....						
Number (average for the year).....	28,165	45,369	12,427	13,398	19,152	51,647
Man-hours, total..... thousands.....	60,805	98,556	27,219	29,782	41,864	109,913
Wages, total.....	\$80,602	\$126,079	\$34,827	\$41,523	\$61,486	\$158,546
Value added by manufacture.....	\$188,881	\$256,226	\$85,541	\$81,358	\$129,789	\$337,676
Number of employees for pay period ended nearest Oct. 15:						
All employees.....	36,264	54,758	14,931	17,382	24,496	65,766
Male.....	33,102	48,518	13,591	16,156	21,723	60,511
Female.....	3,162	6,240	1,340	1,226	2,773	5,255
Production and related workers.....	28,145	46,360	11,907	13,650	19,306	51,499
Male.....	27,366	42,879	11,556	13,530	18,387	50,283
Female.....	779	3,481	351	120	919	1,216
Force-account construction workers.....	3	14	12	13	10	61
Administrative, supervisory, sales, and all other.....	8,116	8,384	3,012	3,719	5,180	14,206
Male.....	5,733	5,625	2,023	2,613	3,325	10,167
Female.....	2,383	2,759	989	1,106	1,854	4,039
All employees, number by month:						
January.....	35,572	51,731	16,119	16,320	23,605	65,530
February.....	36,109	52,751	16,193	16,669	23,553	66,268
March.....	36,228	53,657	16,074	16,904	23,736	66,802
April.....	36,421	54,261	16,053	16,992	24,080	66,575
May.....	36,097	54,158	15,761	17,156	24,399	66,328
June.....	36,528	54,244	15,351	17,195	24,793	66,312
July.....	36,870	51,742	14,794	16,705	24,620	65,596
August.....	36,073	51,625	14,906	17,246	24,632	65,959
September.....	36,205	52,578	14,809	17,237	24,306	65,717
October.....	36,264	54,758	14,931	17,382	24,496	65,766
November.....	36,131	55,272	15,061	17,477	24,602	64,634
December.....	36,039	55,698	15,181	17,670	24,728	64,548
Cost of materials, fuel, electricity, and contract work.....	\$133,062	\$146,813	\$58,514	\$69,727	\$65,523	\$197,069
Materials, parts, containers, and supplies.....	125,889	140,071	54,867	66,489	59,891	183,860
Fuels, total.....	1,245	2,199	727	996	694	2,709
Bituminous coal.....	513	708	240	235	212	905
Anthracite.....	26	44	8	23	99	75
Coke.....	141	429	218	333	87	467
Fuel oils.....	264	646	167	323	206	660
Gas.....	220	186	82	50	85	532
Other fuels.....	81	186	12	32	5	70
Purchased electric energy.....	1,475	1,917	754	776	927	2,845
Contract and commission work.....	4,453	2,626	2,166	1,466	4,011	7,656
Value of inventories:						
Beginning of year, total.....	\$75,923	\$74,217	\$24,371	\$39,967	\$52,352	\$116,090
Finished products.....	27,883	17,495	5,959	6,141	12,833	29,594
Materials, supplies, and work in process.....	48,040	56,722	18,412	33,826	39,519	86,496
End of year, total.....	88,204	90,210	28,251	56,289	66,811	137,164
Finished products.....	33,502	24,731	8,278	8,945	16,298	39,002
Materials, supplies, and work in process.....	54,702	65,479	19,973	47,344	50,513	98,162
Expenditures for plant and equipment:						
New plant and equipment.....	\$12,323	\$13,692	\$4,403	\$6,114	\$4,860	\$19,921
Construction and major alteration of fixed plants.....	6,112	4,078	1,427	2,260	882	5,721
Buildings.....	5,797	3,809	1,119	2,053	852	5,359
Other construction.....	315	269	308	207	30	362
Machinery and equipment.....	6,211	9,614	2,976	3,854	3,978	14,200
Production machinery and equipment.....	4,974	7,984	2,623	3,371	3,277	11,421
Other machinery and equipment.....	1,237	1,630	353	483	701	2,779
Used plant and equipment, and land.....	3,619	896	574	282	413	2,016
Number of highway-type motor vehicles owned or leased:						
Trucks.....	458	345	166	105	130	682
By manufacturer's rated capacity:						
Under 1 1/2 tons.....	272	131	79	34	62	372
1 1/2 tons.....	136	92	54	33	41	184
Over 1 1/2 tons and less than 3 1/2 tons.....	37	76	22	25	20	75
3 1/2 tons and less than 5 tons.....	6	13	4	8	2	17
5 tons and over.....	7	33	7	5	5	34
By body type:						
Van.....	4	11	1	2	11	8
Stake or platform.....	171	152	77	59	36	263
Panel or light delivery.....	186	111	51	26	68	260
All other trucks.....	97	71	37	18	15	151
Truck tractors.....	24	6	4	2	1	11
Trailers and semitrailers.....	27	7	5	2	1	16

CENSUS OF MANUFACTURES: 1947

TABLE 4.—SELECTED GENERAL STATISTICS BY SIZE OF ESTABLISHMENT, FOR THE UNITED STATES: 1947

[Money figures in thousands of dollars. For explanation of line captions see GENERAL EXPLANATIONS. Data which cannot be shown without disclosing information for individual companies have been combined with figures for other groups. A ^d appears in the column where the figure has been omitted and the combined figure is printed in italics]

INDUSTRY AND ITEM	Total, all establish- ments	Establishments with an average of—									
		1-4 em- ployees	5-9 em- ployees	10-19 em- ployees	20-49 em- ployees	50-99 em- ployees	100-249 em- ployees	250-499 em- ployees	500-999 em- ployees	1,000- 2,499 employees	2,500 employees and over
Food-products machinery:											
Number of establishments.....	622	151	111	98	113	64	55	14	12	4	
Number of employees (average for the year).....	36,839	376	737	1,347	3,735	4,671	8,109	4,653	8,091	5,120	
Value added by manufacture.....	\$191,214	\$2,075	\$3,468	\$7,150	\$20,694	\$26,227	\$46,617	\$21,906	\$37,716	\$25,361	
Textile machinery:											
Number of establishments.....	489	92	71	80	117	52	45	12	10	6	4
Number of employees (average for the year).....	53,583	231	499	1,161	3,833	3,819	7,084	3,724	6,287	10,340	16,605
Value added by manufacture.....	\$256,436	\$974	\$2,269	\$5,653	\$19,229	\$21,512	\$36,616	\$22,559	\$32,784	\$42,854	\$71,986
Woodworking machinery:											
Number of establishments.....	294	60	57	41	59	36	29	10	1	1	
Number of employees (average for the year).....	15,642	137	392	582	1,968	2,573	4,662	5,522	(d)	(d)	
Value added by manufacture.....	\$86,360	\$732	\$1,901	\$2,953	\$10,390	\$15,498	\$24,801	\$30,085	(d)	(d)	
Paper-industries machinery:											
Number of establishments.....	149	18	7	29	32	21	18	17	6	1	
Number of employees (average for the year).....	17,088	44	49	390	1,039	1,528	3,029	5,969	5,040	(d)	
Value added by manufacture.....	\$81,358	\$240	\$263	\$2,272	\$5,643	\$8,251	\$13,238	\$32,259	\$19,192	(d)	
Printing-trades machinery:											
Number of establishments.....	326	92	73	59	47	13	20	10	5	6	1
Number of employees (average for the year).....	24,752	204	504	838	1,456	864	3,165	3,012	3,105	11,004	(d)
Value added by manufacture.....	\$131,625	\$1,168	\$2,812	\$4,181	\$9,004	\$5,011	\$16,857	\$17,560	\$20,805	\$54,227	(d)
Total for Special-industry machinery, n.e.c.:											
Number of establishments.....	2,226	855	491	377	285	104	70	25	12	5	2
Number of employees (average for the year).....	68,063	1,853	3,232	5,220	8,718	7,063	11,107	8,946	7,724	14,200	(d)
Value added by manufacture.....	\$348,565	\$11,381	\$17,674	\$28,517	\$47,217	\$38,361	\$61,969	\$54,939	\$35,428	\$53,079	(d)
Patterns and molds (of metal, wood, etc.) for foundries, glass-making plants, plastics-working plants, etc.:											
Number of establishments.....	1,042	487	266	173	92	18	5				
Number of employees (average for the year).....	9,660	1,025	1,750	2,358	2,628	1,209	690				
Value added by manufacture.....	\$55,905	\$6,472	\$9,771	\$12,746	\$14,906	\$7,828	\$4,182				
Special-industry machinery, n.e.c. (except patterns and molds):											
Number of establishments.....	1,184	368	225	204	192	86	65	25	12	5	2
Number of employees (average for the year).....	58,403	828	1,482	2,862	6,090	5,854	10,417	8,946	7,724	14,200	(d)
Value added by manufacture.....	\$292,660	\$4,909	\$7,903	\$15,771	\$32,311	\$30,533	\$57,787	\$54,939	\$35,428	\$53,079	(d)

¹ Includes 2 establishments with no employees accounting for \$9,000 value added.

TABLE 5.—VALUE OF PRODUCTS SHIPPED, BY BROAD CLASSES OF PRODUCTS, FOR THE UNITED STATES: 1947

[The first column shows the total value of shipments of the specified industry, divided among: (A) products classified in (primary to) the industry, (B) products classified in other industries (secondary to the specified industry), and (C) miscellaneous receipts. The second column shows the value of shipments of the primary products of the specified industry reported by establishments in other industries. The third column shows the total value of shipments of the primary products of the specified industry by all reporting manufacturers]

[Money figures in thousands of dollars]

FOOD-PRODUCTS MACHINERY INDUSTRY	Shipped by—		
	Food-products machinery industry	Other industries	All industries
Total shipments by the industry	\$326,416		
A. Food-products machinery.....	274,440	\$60,293	\$334,733
Dairy and milk products plant machinery and equipment.....	46,405	14,460	60,865
Bakery machinery and equipment.....	31,749	7,692	39,441
Bottling machinery, except dairy.....	32,152	2,290	34,442
All other food-products machinery.....	164,134	35,851	199,985
B. Secondary products.....	34,049		
✓ Metal tanks.....	2,603		
Chemical manufacturing industries machinery and equipment.....	4,057		
Other secondary products.....	27,389		
C. Miscellaneous receipts.....	17,927		
Contract and commission work.....	2,818		
Repair work.....	12,859		
Scrap and salable refuse.....	333		
Nonmanufacturing activities.....	1,917		

TEXTILE MACHINERY INDUSTRY	Shipped by—		
	Textile machinery industry	Other industries	All industries
Total shipments by the industry	\$403,385		
A. Textile machinery industry.....	365,756	\$14,232	\$379,988
B. Secondary products (screw-machine products, special-industry machinery, machine shop products, etc.).....	20,958		
C. Miscellaneous receipts.....	16,671		
Contract and commission work.....	2,010		
Repair work.....	12,473		
Scrap and salable refuse.....	548		
Nonmanufacturing activities.....	1,640		

WOODWORKING MACHINERY INDUSTRY	Shipped by—		
	Wood-working machinery industry	Other industries	All industries
Total shipments by the industry	\$145,326		
A. Woodworking machinery.....	111,715	\$39,864	\$151,379
Woodworking machinery, other than that designed primarily for home workshops, laboratories, etc.....	93,895	31,855	125,750
Woodworking machinery designed primarily for home, workshops, laboratories, etc. (except power-driven hand-held tools).....	15,151	7,375	22,526
Woodworking machinery, not reported by type.....	2,669	434	3,103
B. Secondary products (machine tools, gray-iron castings, other metalworking machinery, farm machinery, etc.).....	29,093		
C. Miscellaneous receipts.....	4,518		
Contract and commission work.....	2,096		
Repair work.....	2,086		
Other receipts.....	336		

PAPER-INDUSTRIES MACHINERY INDUSTRY	Shipped by—		
	Paper-industries machinery industry	Other industries	All industries
Total shipments by the industry	\$151,085		
A. Paper industries machinery.....	120,166	\$14,547	\$134,713
B. Secondary products (gray-iron castings, construction machinery, food-products machinery, general industrial machinery, etc.).....	20,838		
C. Miscellaneous receipts.....	10,081		
Contract and commission work.....	1,423		
Repair work.....	7,973		
Other receipts.....	685		

PRINTING-TRADES MACHINERY INDUSTRY	Shipped by—		
	Printing-trades machinery industry	Other industries	All industries
Total shipments by the industry	\$198,763		
A. Printing-trades machinery.....	183,343	\$7,939	\$191,282
B. Secondary products.....	9,764		
C. Miscellaneous receipts.....	5,656		
Repair work.....	4,218		
Other receipts.....	1,438		

SPECIAL-INDUSTRY MACHINERY, N.E.C., INDUSTRY	Shipped by—		
	Special-industry machinery, n.e.c. industry	Other industries	All industries
Total shipments by the industry	\$550,999		
A. Special-industry machinery, n.e.c.....	428,547	\$113,391	\$539,938
Chemical manufacturing industries machinery and equipment.....	63,284	24,091	87,375
Foundry machinery and equipment.....	76,657	11,539	88,196
Plastics-working machinery and equipment.....	29,915	13,722	43,637
Rubber-working machinery and equipment.....	42,679	3,766	46,445
Petroleum refinery machinery and equipment.....	12,635	9,843	22,478
Other special-industry machinery and equipment.....	179,173	46,960	226,133
Special-industry machinery and equipment, not reported by type.....	22,204	3,470	25,674
B. Secondary products.....	93,810		
Jigs, fixtures, etc., for machine tools.....	1,964		
Valves and fittings for piping systems, except plumbing and heating valves.....	4,067		
Industrial process instruments.....	2,114		
Other secondary products (food products machinery, general industrial machinery, machine shop products, etc.).....	85,665		
C. Miscellaneous receipts.....	30,642		
Contract and commission work.....	10,778		
Repair work.....	16,632		
Scrap and salable refuse.....	1,134		
Nonmanufacturing activities.....	2,068		

CENSUS OF MANUFACTURES: 1947

TABLE 6.—QUANTITY AND VALUE OF PRODUCTS, TOTALS FOR THE UNITED STATES: 1947 AND 1939

[Money figures in thousands of dollars]

PRODUCT	1947		1939	
	Total shipments and interplant transfers		Total production for sale and interplant transfer	
	Quantity	Value f.o.b. plant	Quantity	Value f.o.b. plant
Dairy and milk products plant machinery and equipment		\$60,865		\$17,082
Pasteurizers:				
Batch or vat-type.....	3,501	5,123		2,283
Continuous or plate-type.....		2,619		
Homogenizers.....		5,502		
Butter churns (except farm-type).....	450	475		
Ice cream freezers.....	1,608	5,111		14,799
Bottling machinery for dairies (washing, sterilizing, filling, capping, labeling, etc.).....		22,130		
Other dairy and milk products plant machinery and equipment, including cream separators (capacity over 1,500 pounds per hour), clarifiers, and butter and cheese-wrapping and packaging machines.....		10,999		
		39,441		17,583
Bakery machinery and equipment		823		(1)
Flour handling equipment.....		6,243		3,289
Dough mixers.....		1,440		(2)
Proof boxes.....				
Bake ovens:				
Traveling tray.....	342	3,893		4,419
Other.....		5,121		
Slicing machines.....	600	1,813	n.a.	1,649
Wrapping machines.....	799	4,621	n.a.	1,405
Other bakery machinery and equipment.....		15,487		6,821
		34,442		11,959
Bottling machinery, except dairy		3,180		
Carbonators (beverage bottling).....	980			
Filling-capping machines:				
48 bottles per minute and under.....	589	1,730		
Over 48 bottles per minute.....	838	7,880		(4)
Bottle washers:				
48 bottles per minute and under.....	674	2,674		
Over 48 bottles per minute.....		12,194		
Other bottling machinery, except dairy.....		6,784		
		199,985		44,256
All other food-products machinery		14,056		10,126
Meat- and poultry-packing plant machinery and equipment.....		30,096		6,087
Fruit- and vegetable-canning and packing machinery.....		25,437		2,935
Flour-mill and grain-mill machinery.....		10,949		5,659
Sugar-plant machinery.....		49,642		7,035
Other industrial food-products machinery.....		14,390		
Parts and attachments for industrial food-products machinery.....				
Commercial food-preparation machines: ¹⁰				
Slicers.....		7,432		4,832
Choppers, grinders, cutters, dicers, and similar machines.....	51,381	15,043	n.a.	3,542
Tenderizers.....	30,869	3,589	n.a.	(11)
Coffee mills.....	6,493	727	n.a.	626
Mixers and whippers (except drink mixers).....	12,486	5,482	n.a.	3,514
Other commercial food-preparation machines, power driven.....		6,770		(8)
Parts and attachments for commercial food-preparation machines.....		3,772		(9)
		379,988		85,600
Textile machinery				
Fiber-to-fabric:				
Cleaning and opening machinery:				
Carbonizing machines.....		914		(12)
Picker machines.....	765	2,226	288	572
Other cleaning and opening machinery (including garnetting machines).....		6,411		(13)
Carding machines.....	5,692	10,838	470	860
Combing machines.....	459	2,740	237	389
Drawing and roving frames:				
Drawing and preparing.....	5,619	4,491		
Roving.....	1,218	6,001		(14)
Spinning and twisting frames:				
Cotton:				
Number of frames.....	3,933			
Total number of spindles.....	1,049,078	17,180	n.a.	6,155
Other spinning frames (including wool).....		10,221		
Twisting frames:				
Number of frames.....	2,131			
Total number of spindles.....	316,613	10,232	1,056	2,778
n.a.				
Yarn preparing machines:				
Winding machines (skein, spool, bobbin, quill, cone, etc.).....		16,177		3,926
Other yarn preparing machines (beaming, warping, slashing, etc.).....		4,209		1,515
Parts, attachments, and accessories for fiber-to-fabric machinery:				
Card clothing for cotton (quantity in square feet).....	1,069,145	3,852	609,808	1,457
Card clothing for wool and other fibers (quantity in square feet).....	984,991	4,093	398,829	1,080
Other parts, attachments, and accessories for fiber-to-fabric machinery.....		26,007		(15)
Fabric machinery:				
Power looms.....		34,387		7,472
Parts, attachments, and accessories for power looms:				
Jacquards.....		856		
Other parts, attachments, and accessories for power looms.....		37,655		(16)
Knitting machines:				
Hosiery.....	8,103	35,830	4,509	10,845
Other than hosiery.....		10,113		1,162
Braiding machines.....	10,250	2,272	2,600	458
Other fabric machinery, including lace and embroidery.....		1,371		(17)
Parts, attachments, and accessories for fabric machinery, except power looms.....		15,094		(18)
Bleaching, dyeing, and finishing machinery (including parts, attachments, and accessories).....		30,201		5,907
Machinery for drying stock, yarn, cloth, etc.....		6,063		1,678
All other textile industries machinery.....		28,107		12 5,595
Textile industries machinery parts, attachments, and accessories, not elsewhere classified.....		42,058		12 33,961
Textile industries machinery, not reported by type.....		4,389		

See footnotes at end of table.

TABLE 6.—QUANTITY AND VALUE OF PRODUCTS, TOTALS FOR THE UNITED STATES: 1947 AND 1939—Continued

PRODUCT	1947		1939	
	Total shipments and interplant transfers		Total production for sale and interplant transfer	
	Quantity	Value f.o.b. plant	Quantity	Value f.o.b. plant
Woodworking machinery (except machinery designed primarily for home workshops, laboratories, garages, service shops, and model makers)		\$125,750		n.a.
Sawmill equipment.....		20,820		\$2,352
Veneer and plywood-making machinery.....		7,802		
Woodbox and crate-making machinery.....		4,077		
Planing machines.....	12,956	5,914		
Surfacing machines (except hand-held).....		3,440		
Sawing machines (except sawmill equipment):				
Quantity reported.....	105,327	22,250		n.a.
Quantity not reported.....	n.a.	6,961		
Jointers, matchers, molders, mortisers, shapers, tenoners, and lathes (except power-driven hand-held tools).....		15,037		
Other woodworking machinery (except power-driven hand-held tools).....		19,331		
Parts, attachments, and accessories.....		20,118		
Woodworking machinery designed primarily for home workshops, laboratories, garages, service shops, and model makers (except power-driven hand-held tools)		22,526		n.a.
Lathes.....		1,222		
Sawing machines.....	515,785	12,510		4,816
Other machines (except power-driven hand-held tools), designed primarily for home workshops, etc.		4,035		
Parts, attachments, and accessories.....		4,759		n.a.
Woodworking machinery, not reported by type.....		3,103		
Pulp and paper industries machinery		134,713		31,227
Wood preparation equipment (including barkers, chippers, knotters, splitters, chipscreens, etc.).....		2,131		
Pulp mill machinery ¹⁴		9,715		
Paper mill machinery:				
Beaters, jordans, and other stock preparation equipment.....		11,339		
Paper machines:				
Fourdriniers (including yankee machines) and components.....		12,905		
Cylinders and components.....		11,427		
Forming machines, including wet machines used for making a finished product.....		964		
Calenders, including super calenders.....		3,878		
Finishing machinery, except calenders.....		1,943		
Paper and paperboard converting equipment:				(15)
Bagmaking, including shipping sack, machines.....		3,888		
Envelope making machines.....	332	2,457		
Corrugated box machines.....	836	9,127		
Box, carton, and shipping container machines, except corrugated box machines.....		9,835		
Other pulp mill, paper mill, and paper converting machinery and equipment (including drum, can, and tube machines and toilet roll and napkin machines).....		23,345		
Parts and attachments for pulp mill, paper mill, and paper converting machinery and equipment, sold separately.....		22,760		
Rebuilt pulp and paper industries machinery:				
Rebuilt paper machines (including fourdriniers, yankee machines, cylinders, and forming machines).....		4,788		
Other rebuilt pulp and paper industries machinery.....		1,381		
Paper industries machinery, not reported by type.....		2,830		
Printing-trades machinery and equipment		191,282		52,583
Presses:				
Letterpress (typographical, relief):				
Sheet-fed:				
High-speed cylinder (job) up to and including 22" by 28", including verticals.....	2,297	12,533		
Cylinder presses over 22" by 28".....	582	8,768		16 8,839
Rotary letterpress (sheet-fed) and platen.....		7,954		
Roll or web-fed:				
Newspaper (high speed rotary and flat-bed and high-speed platen).....		15,701		
Rotary letterpress.....	55	8,694		2,689
Offset lithographic:				
Sheet-fed, single color.....	843	7,720		
Sheet-fed, multicolor, and web-fed.....	187	8,134	417	3,380
Gravure.....	113	5,807	36	1,052
Other presses (including proof and rebuilt).....		6,075		(17)
Typesetting machinery and equipment:				
Typesetting and typecasting machines.....	2,599	13,006	n.a.	6,399
Mitering machines and saw trimmers.....		1,205		n.a.
Matrices.....		9,594		n.a.
Other typesetting equipment.....		1,704		n.a.
Electrotyping machinery and equipment.....		1,459		
Stereotyping machinery and equipment.....		3,116		1,015
Mounting and registering bases, including hooks.....		1,057		n.a.
Photoengraving and lithographing platemaking equipment (excluding cameras).....		1,605		16 881
Bookbinding machinery and equipment, including cutting, folding, gathering, inserting, ruling, etc.		14,620		2,127
Engravers materials and equipment (including metal plates, wood blocks, lithographic stones, etc.).....		5,701		2,536
Other printing machinery and equipment:				
Ink rollers.....		7,140		
Foundry type, rules, leads, slugs, borders, and ornaments.....		4,646		8,657
Other printing machinery and equipment.....		14,092		19 10,211
Parts, attachments, and accessories for printing-trades machinery and equipment, sold separately.....		25,034		4,697
Printing-trades machinery and equipment, not reported by type.....		5,917		
Chemical manufacturing industries machinery and equipment		87,375		n.a.
Foundry machinery and equipment		88,196		n.a.
Molding machines.....	5,057	7,110	n.a.	1,538
Patterns and molds (of metal, wood, etc.).....		53,765		n.a.
Core making machines.....	1,438	1,140		
Blast cleaning equipment.....		4,994		5,267
Other foundry machinery.....		21,187		

See footnotes at end of table.

TABLE 6.—QUANTITY AND VALUE OF PRODUCTS, TOTALS FOR THE UNITED STATES: 1947 AND 1939—Continued

PRODUCT	1947		1939	
	Total shipments and interplant transfers		Total production for sale and interplant transfer	
	Quantity	Value f.o.b. plant	Quantity	Value f.o.b. plant
Plastics-working machinery and equipment.		\$13,637		
Compression-molding machines.....	781	5,113		
Extrusion-molding machines.....	456	1,902		
Injection-molding machines.....	357	3,917		n.a.
Patterns and molds (of metal, wood, etc.).....		23,971		
Other plastics-working machinery and equipment.....		8,015		
Plastics-working machinery and equipment, not reported by type.....		719		
Rubber-working machinery and equipment.		46,445		\$13,685
Banbury and mill-mixing machinery and warming-up machinery.....		7,878		
Calendering machines.....	52	1,055		
Extruding machines.....	201	1,676		n.a.
Vulcanizing presses.....	974	5,920		
Tire-building equipment.....		6,830		
Other rubber-working machinery.....		23,086		
Petroleum refinery machinery and equipment.		22,478		16,360
Other special-industry machinery and equipment.¹⁰		226,133		n.a.
Tobacco-manufacturing machinery and equipment:				
Cutting machines.....		1,277		
Other tobacco-manufacturing machinery and equipment (including cigarette- and cigar-making machines).....		18,869		3,337
Clayworking machinery and equipment (brick, tile, and ceramics):				
Pugmills.....	198	1,224		
Other clayworking machinery and equipment.....		5,759		3,035
Cement-making machinery and equipment (except cement kilns).....		8,111		
Concrete-products machinery and equipment:				
Concrete-block machines.....		9,514		1,092
Concrete-pipe-making machines.....		1,399		647
Other concrete-products machinery and equipment.....		7,061		
Cotton-ginning machinery and equipment:				
Cotton gins (number represents number of stands).....	1,670	2,752		5,115
Other cotton-ginning machinery and equipment.....		17,681		
Glass-making machinery and equipment:				
Bottle-forming machines.....	147	2,964		
Grinding and polishing machines.....		1,681		4,459
Other glass-making machinery and equipment (including sheet and window glass drawing machines, batch mixing machines, glass presses, plate-rolling mills, and glass tube and rod drawing machines).....		16,964		
Shoemaking and repairing machinery:				
Sole stitching machines.....	3,012	3,041		10,603
Other shoemaking and repairing equipment.....		20,667		
Other special-industry machinery and equipment (including incandescent-lamp-making, electronic-tube-making, paint-making, stone-working, hat-making, leather-working, jewelers, and pharmaceutical).....		107,169		n.a.
Special-industry machinery, not reported by type.....		25,674		

n.a.—Not available.

¹ Does not include value of cream separators over 1,500 lbs. per hour capacity, which were not reported separately in 1939.² In 1939, flour handling equipment and proof boxes were included with other bakery machinery and equipment.³ For combination slicing and wrapping machines, the number and value of slicing units are included with slicing machines, and the number and value of wrapping units with wrapping machines.⁴ Detailed data are not available.⁵ Includes dehairing, killing, stuffing, cooking, rendering, cutting, pressing, grinding, chopping, and canning machines, etc.⁶ Includes slicers, graders, juice extractors, wrappers, pulpers, steaming, cooking, washing, filling, and sealing machines, etc.⁷ Includes cane and beet mills, crushers, pulverizers, crystallizers, granulators, etc.⁸ In 1939, combined data were collected for other industrial food-products machinery and other commercial food-preparation machines.⁹ In 1939, combined data were collected for parts and attachments for industrial food products machinery and commercial food-preparation machines.¹⁰ Includes power-driven machines for use by hotels, restaurants, institutions, meat markets, butcher shops, food-products stores, and similar commercial organizations.¹¹ Included in other industrial food-products machinery.¹² Included in all other textile industries machinery.¹³ Included in textile industries machinery parts and attachments and accessories, not elsewhere classified.¹⁴ Includes grinders, digesters, deckers, thickeners, wet lap machines, bleaching equipment, pulp screens, washers, savealls, and recovery room equipment.¹⁵ Detailed data are not available.¹⁶ Includes a small amount of proof presses.¹⁷ Included in other printing machinery and equipment.¹⁸ For 1939, the figure includes only photoengraving machinery.¹⁹ Includes all rebuilt printing trades machinery.²⁰ Some equipment in this group is leased rather than sold outright. For leased equipment, estimates of the value of products produced during the year were reported. These estimates approximated the value of the products had they been sold outright and were based on market values of the products, tax or insurance valuation, etc.

SPECIAL-INDUSTRY MACHINERY

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TABLE 7.—SELECTED MATERIALS CONSUMED, BY KIND: 1947

[The table below summarizes the consumption of selected metal shapes by manufacturers during 1947. For each shape, manufacturing establishments were required to report consumption, in quantity and cost, provided that such usage during 1947 exceeded the following amounts: for iron castings, steel castings, each of six carbon steel shapes—50 short tons; for alloy steel bars and all other alloy steel—25 short tons; for stainless steel, brass and copper wire mill shapes, copper and brass castings, aluminum mill shapes and aluminum castings—10 short tons]

[Money figures in thousands of dollars]

METAL SHAPE	FOOD-PRODUCTS MACHINERY INDUSTRY			TEXTILE MACHINERY INDUSTRY			WOODWORKING MACHINERY INDUSTRY		
	Establishments consuming more than specified quantities								
	Number	Short tons	Cost	Number	Short tons	Cost	Number	Short tons	Cost
Iron castings, rough and semifinished	107	38,561	\$10,198	82	69,594	\$17,782	79	34,917	\$8,397
Steel castings, rough and semifinished	21	5,027	1,610	7	1,135	470	13	1,759	398
Steel mill shapes and forms	n.a.	90,845	15,068	n.a.	105,893	16,914	n.a.	26,562	3,986
Carbon steel:									
Bars and bar shapes	79	22,300	2,502	57	54,893	5,906	45	9,688	1,235
Sheet and strip	89	28,314	3,492	37	17,274	2,391	19	3,694	457
Structural shapes	45	8,012	714	16	5,524	609	15	4,317	552
Plates	45	23,735	2,293	19	8,084	775	9	1,874	177
Wire	(1)	214	27	37	5,503	2,437	(1)	5	5,296
All other mill shapes and forms	8	1,105	163	14	7,023	1,097	5		630
Alloy steel, except stainless:									
Bars and bar shapes	10	721	116	7	3,984	527	8	1,157	801
All other mill shapes and forms	5	714	190	(1)	524	59	(1)	451	66
Stainless steel	76	5,730	5,671	31	3,084	3,113	(1)	85	68
Copper and copper-base alloy:									
Brass and wire mill shapes and forms	32	2,660	2,076	21	1,427	965	(1)	260	228
Castings, rough and semifinished	44	2,917	2,771	12	283	217	(1)	93	77
Aluminum:									
Aluminum mill shapes	14	892	499	15	1,544	1,103	(1)	31	28
Castings, rough and semifinished	28	1,256	1,367	8	234	267	7	1,018	860

METAL SHAPE	PAPER-INDUSTRIES MACHINERY INDUSTRY			PRINTING-TRADES MACHINERY INDUSTRY			SPECIAL-INDUSTRY MACHINERY, N.E.C., INDUSTRY		
	Establishments consuming more than specified quantities								
	Number	Short tons	Cost	Number	Short tons	Cost	Number	Short tons	Cost
Iron castings, rough and semifinished	50	49,375	\$10,606	37	40,438	\$11,083	157	72,004	\$16,159
Steel castings, rough and semifinished	18	3,492	1,218	(1)	510	181	53	22,303	7,277
Steel mill shapes and forms	n.a.	23,298	4,252	n.a.	12,676	1,941	n.a.	199,033	21,723
Carbon steel:									
Bars and bar shapes	30	7,585	1,005	25	9,068	1,364	98	36,771	3,831
Sheet and strip	6	811	145	6	885	122	61	30,043	3,410
Structural shapes	13	3,152	337				57	21,303	1,753
Plates	16	6,562	673	(1)	1,091	75	90	82,154	6,883
Wire	(1)	1,020	138				9	2,666	380
All other mill shapes and forms	(1)	383	94	5	1,435	319	16	15,435	1,644
Alloy steel, except stainless:									
Bars and bar shapes	13	2,216	451	(1)	158	30	21	3,261	664
All other mill shapes and forms	(1)	140	33	(1)			9	4,641	672
Stainless steel	16	1,429	1,376	(1)	39	31	28	2,759	2,586
Copper and copper-base alloy:									
Brass and wire mill shapes and forms	17	1,105	872	8	3,229	2,239	31	4,546	3,673
Castings, rough and semifinished	22	1,695	1,305	8	448	426	32	1,910	1,539
Aluminum:									
Aluminum mill shapes	(1)	25	26	(1)	85	62	25	795	460
Castings, rough and semifinished	(1)	15	23	7	384	564	41	1,183	1,322

n.a.—Not available.

¹ Less than 5 establishments.

CENSUS OF MANUFACTURES: 1947

TABLE 8.—NUMBER OF ESTABLISHMENTS PERFORMING SELECTED METALWORKING OPERATIONS: 1947

[The figures in the table represent the number of establishments maintaining the metalworking operation specified, according to the usual number of production workers employed in the operation during 1947]

METALWORKING OPERATION	FOOD-PRODUCTS MACHINERY INDUSTRY						TEXTILE MACHINERY INDUSTRY						WOODWORKING MACHINERY INDUSTRY					
	Number of establishments performing selected metalworking operations																	
	Total	Distribution by number of production workers in the operation					Total	Distribution by number of production workers in the operation					Total	Distribution by number of production workers in the operation				
		1-4	5-19	20-49	50-99	100 and over		1-4	5-19	20-49	50-99	100 and over		1-4	5-19	20-49	50-99	100 and over
Foundry.....	36	6	8	13	6	3	28	1	4	6	5	12	23	3	8	6	5	1
Die casting.....	4	4					2	2					4	3	1			
Forging—presses, hammers, or upsetters.....	15	12	3				20	18	2	3	2	1	15	10	4	1		
Electroplating.....	21	14	6		1		21	16	4	1			3	3				
Galvanizing and other hot dip coating.....	24	18	5	1			4	3	1									
Heat treating or annealing of metals.....	51	41	8	1		1	77	56	17	4			34	26	5	2		1
Automatic screw-machine department.....	25	15	7	1	2		52	30	12	6	1	3	18	13	4	1		
Machine shop.....	361	116	115	61	44	25	308	79	100	64	23	42	191	39	64	44	22	22
Tool and die room.....	76	39	28	5	1	3	65	30	20	10		5	34	20	13	1		
Pattern shop.....	50	40	5	3		2	57	39	10	5	3		44	37	7			
Plate or structural fabrication.....	153	44	57	30	15	7	56	23	21	7	2	3	36	20	13	3		
Stamping, blanking, forming, or drawing.....	109	52	38	13	3	3	100	52	26	14	7	1	25	15	8	2		

METALWORKING OPERATION	PAPER-INDUSTRIES MACHINERY INDUSTRY						PRINTING-TRADES MACHINERY INDUSTRY						SPECIAL-INDUSTRY MACHINERY, N.E.C., INDUSTRY					
	Number of establishments performing selected metalworking operations																	
	Total	Distribution by number of production workers in the operation					Total	Distribution by number of production workers in the operation					Total	Distribution by number of production workers in the operation				
		1-4	5-19	20-49	50-99	100 and over		1-4	5-19	20-49	50-99	100 and over		1-4	5-19	20-49	50-99	100 and over
Foundry.....	26	1	5	9	2	9	14	4	2	2	4	2	116	60	21	20	10	5
Die casting.....	1	1					4	2					18	10	8			
Forging—presses, hammers, or upsetters.....	4	2	2				4	3	1				23	15	4	3	1	
Electroplating.....	4	3	1				10	8	2				22	16	4	1		1
Galvanizing and other hot dip coating.....							2	1		1			10	9	1			
Heat treating or annealing of metals.....	23	20	1	2			27	21	5		1		94	79	9	3	1	2
Automatic screw-machine department.....	7	6		1			25	16	9				31	16	10	3	2	
Machine shop.....	126	16	31	34	14	31	115	17	41	19	11	27	678	181	245	139	61	52
Tool and die room.....	24	9	12	2		1	31	6	13				169	64	69	30	2	4
Pattern shop.....	45	26	13	4	1	1	23	15	7	10	1	1	734	372	293	59	8	2
Plate or structural fabrication.....	26	13	7	4	2		10	5	4				164	53	60	28	13	10
Stamping, blanking, forming, or drawing.....	7	4	2	1			28	17	10	1			106	62	25	15	3	1

NOTE: In the Food-Products Machinery Industry, 133 small establishments did not report any detailed statistics, including this inquiry. In the Textile Machinery Industry, there were 15 such small establishments; in the Woodworking Machinery Industry, 37; in the Printing-Trades Machinery Industry, 99; and in the Special-Industry Machinery, Not Elsewhere Classified, Industry, 608. In addition, in the above industries as well as in the Paper-Industries Machinery Industry, a small number of establishments reporting detailed statistics (less than 10 percent of the total) did not answer the inquiry on metalworking operations. Most of these establishments had a small number of employees.

GENERAL INDUSTRIAL MACHINERY AND EQUIPMENT

This report shows the 1947 Census of Manufactures statistics for establishments primarily engaged in the production of general industrial machinery and equipment such as pumps and compressors, elevators and escalators, conveyors and conveying equipment, blowers, exhaust and ventilating fans, industrial trucks, tractors, trailers, and stackers, mechanical power-transmission equipment (except ball and roller bearings), industrial furnaces and ovens, mechanical stokers, and other machinery and equipment for general industrial use for which no special classification is provided. These establishments have been classified in nine industries described separately below.

Pumps and Compressors (*Full Standard Industrial Classification title and number: Pumps, Air and Gas Compressors, and Pumping Equipment, Industry 3561.*)—This industry comprises establishments primarily engaged in manufacturing pumps, compressors, and pumping equipment for general industrial use. Important products of this industry include hand and power-driven pumps, pumps for fluid power systems, air compressors, gas compressors (except ice-making, refrigerating, and air-conditioning units—Industry 3585), and spraying and dusting units for paints and chemicals. Establishments primarily engaged in manufacturing measuring- and dispensing-pumps for gasoline service station use are classified in Industry 3586.

Figures on domestic water systems, domestic hand and windmill pumps, cylinders, and pump jacks for domestic water systems were collected on a monthly basis by the Bureau of the Census on Form M31B during 1947. The detailed statistics for the individual types of domestic water systems and hand and windmill pumps as shown in table 6 are derived from the monthly survey, revised on the basis of additional data received from some establishments in the Census of Manufactures.

This report provides in table 6 much more information on pumps and compressors than has been available in any previous Census of Manufactures. The most important category of products in the industry, "industrial pumps," is somewhat of a catch-all, however, and includes, in addition to pumps for industrial purposes, pumps for household and other uses requiring inexpensive installations. These latter pumps are usually of smaller capacities. In an effort to separate the two types of pumps, some of the individual classifications in table 6 have been subdivided on a unit value basis. That is, the figures for companies reporting a specified type of pump with an average value, for example, under \$20 have been shown separately from the figures for companies reporting pumps valued at \$20 or more in the same classification.

Of the total value of \$520 million of pumps and compressors, 18 percent was shipped by establishments classified in other industries. Establishments classified in the pumps and compressors industry shipped \$423 million of pumps and compressors and \$107 million of other products such as Diesel and semi-Diesel engines, oil-field machinery and tools, gray-iron castings, valves, etc.

Elevators and Escalators (*Standard Industrial Classification No. 3562.*)—This industry comprises establishments primarily engaged in manufacturing passenger or freight elevators, automobile lifts, dumb-waiters, and escalators. Establishments primarily engaged in manufacturing commercial conveyor systems and equipment are classified in Industry 3563. Although separate data were collected for escalators,

they could not be shown without disclosing figures for individual companies.

Some establishments classified in this industry installed the elevators and related equipment which they produced. Companies which included their installation costs in their reports also included their receipts for such installation in the value of products shipped.

In 1939, elevators and escalators were included with conveyors in the industry "Elevators, Escalators, and Conveyors." The 1939 reports have been retabulated to provide data comparable with 1947, but data for earlier years are not available.

Of the 1947 total of \$96 million of elevators and moving stairways, 9 percent was shipped by establishments classified in other industries.

Conveyors (*Full Standard Industrial Classification title and number: Conveyors and Conveying Equipment, Industry 3563.*)—This industry comprises establishments primarily engaged in manufacturing conveyors and conveying equipment for installation in factories, warehouses, mines, and other industrial and commercial establishments. Establishments primarily engaged in manufacturing passenger or freight elevators, dumb-waiters, and escalators are classified in Industry 3562.

In 1939, conveyors and conveying equipment were combined with elevators and escalators in the industry "Elevators, Escalators, and Conveyors." Also, overhead traveling cranes, which in 1939 were classified in the Construction and Similar Machinery Industry, are classified in the Conveyors Industry in 1947. The 1939 reports have been retabulated to provide comparable data. Data for earlier years, however, are not available.

Some establishments classified in the industry installed the conveyors and conveying equipment they produced in 1947. Companies which included their installation costs in their reports also included their receipts for such installation in the value of products shipped. Employment statistics shown below include only the employees attached to the manufacturing establishment and exclude local labor hired in the field for the installation or erection work.

Of the total value of \$234 million of conveyors and conveying equipment, 21 percent was shipped by establishments classified in other industries. Establishments classified in the Conveyors and Conveying Equipment Industry shipped \$186 million worth of conveyors and conveying equipment, and \$53 million of other products such as excavating and road construction and maintenance machinery, mechanical power-transmission equipment, and industrial machinery.

Blowers and Fans (*Full Standard Industrial Classification title and number: Blowers, Exhaust and Ventilating Fans, Industry 3564.*)—This industry comprises establishments primarily engaged in manufacturing blowers, and exhaust and ventilating fans for general industrial, commercial, and household use, including attic fans, blower-filter units (furnace blowers), and fans for mechanical draft. Establishments primarily engaged in manufacturing complete air conditioning units are classified in Industry 3585, and circulating fans for use on desks, pedestals, or wall brackets in Industry 3621. Also included in this industry are establishments primarily engaged in manufacturing dust collection and related equipment.

Quarterly statistics on the total value of blowers and fans shipped were collected during 1947 by the Bureau of the Census on Form M31E. The figures in table 6 are derived from these data for the year 1947. Revisions in the current survey data reflect the inclusion of establishments for which statistics were obtained in the Census of Manufactures but not in the current survey. In addition, some establishments submitted revised data in the Census of Manufactures.

Of the total 1947 value of \$130 million of blowers and fans, 22 percent was shipped by establishments classified in other industries. Establishments classified in the blowers and fans industry shipped \$102 million of fans and blowers and \$34 million of other products such as sheet-metal products, cooking and heating apparatus, and refrigeration machinery.

The fan and blower commodity statistics for 1939 are not comparable with those collected in 1947. As a consequence, the 1939 figures are not shown in table 6.

Industrial Trucks and Tractors (*Full Standard Industrial Classification title and number: Industrial Trucks, Tractors, Trailers, and Stackers, 3565.*)—This industry comprises establishments primarily engaged in manufacturing industrial trucks, tractors, trailers, stackers, and accessories used for handling materials on floors and paved surfaces in and around industrial plants, depots, docks, and terminals. Establishments primarily engaged in manufacturing motor vehicles and motor-vehicle trailers are classified in Group 371, wheel-type and track-laying tractors in Industry 3521, and mining cars in Industry 3531.

In 1939, industrial tractors were included in the Tractor Industry. For 1947, these tractors have been classified in the Industrial Trucks and Tractors Industry. The reports for 1939 have been retabulated on a comparative basis with 1947. Data for earlier years, however, are not available.

Of the total value of \$157 million of industrial trucks and tractors, 16 percent was shipped by establishments classified in other industries. Establishments classified in the industrial trucks and tractors industry shipped \$131 million worth of industrial trucks and tractors and \$24 million of other products such as hardware, construction machinery, and conveyors.

The 1939 commodity data on industrial trucks and tractors are not comparable with those collected for 1947. As a consequence, the 1939 figures are not shown in table 6.

Power-Transmission Equipment (*Full Standard Industrial Classification title and number: Mechanical power-transmission equipment (except ball and roller bearings), Industry 3566.*)—This industry comprises establishments primarily engaged in manufacturing mechanical power-transmission equipment such as chain drives, variable speed drives, speed reducers, gears, clutches (mechanical, hydraulic, or magnetic), shafts, bearings (except ball and roller bearings in Industry 3593), and parts for such equipment. Establishments primarily engaged in manufacturing automobile power-transmission equipment are classified in the Motor Vehicles and Parts Industry and ball and roller bearings in Industry 3593.

According to the Standard Industrial Classification, nonferrous bushings are classified in Industry 3361, Nonferrous Foundries. However, many establishments producing both bushings and bearings reported all of their shipments as either bushings or bearings and were classified in Industry 3566. Bushings have been combined with bearings in the commodity statistics shown in table 6. A few establishments which reported the production of bushings only or bushings and other nonferrous foundry products were classified in the Nonferrous Foundries Industry, in accordance with the Standard Industrial Classification. Shipments of bushings from these establishments are included in table 6 below.

Although quantity data were requested for a number of the commodities classified in this industry, these data cannot be published since many of the reporting companies indicated that their records did not provide the number of units shipped.

Industrial Furnaces and Ovens (*Standard Industrial Classification No. 3567.*)—This industry comprises establishments primarily engaged in manufacturing electric, coal, gas, oil, and other fuel-fired or steam-heated industrial furnaces and ovens. Establishments primarily engaged in manufacturing electric heating units for furnaces and ovens are classified in Industry 3619.

Establishments producing electric furnaces and ovens were classified in 1939 in the Generating, Distribution, and Industrial Apparatus, Not Elsewhere Classified, Industry, and the nonelectric types in the Machine Shop Products, Not Elsewhere Classified, Industry. Reports for 1939 were retabulated on a basis comparable with 1947. However, data for earlier years are not available.

Some establishments in this industry installed the ovens and furnaces which they produced. The companies which included installation costs in their reports also included their receipts for such installations in the value of products shipped. Establishments engaged in engineering or constructing industrial furnaces or ovens but maintaining no manufacturing facilities are excluded from the Census of Manufactures.

The total number of ovens and furnaces, as shown in table 6, includes a wide variety of types and sizes, even though bench type and retort furnaces are excluded. For this reason, figures on number of furnaces have limited significance. For example, the average unit value for fuel-fired metal processing and heat treating furnaces reported by different companies varied from about \$2,000 to over \$20,000 each. Similar wide ranges are evident in the other types of furnaces as well.

Of the total \$85 million of industrial furnaces and ovens, 26 percent was shipped by establishments classified in other industries.

Mechanical Stokers (*Full Standard Industrial Classification title and number: Mechanical Stokers, Domestic and Industrial, Industry 3568.*)—This industry comprises establishments primarily engaged in manufacturing domestic and industrial stokers for anthracite and bituminous coal, either hopper fed, or with a conveyor for direct feed from the bin.

Monthly statistics on the number of mechanical stokers, by each of five principal types, were collected during 1947 by the Bureau of the Census on Form M51B. Total figures for 1947 as shown in table 6 below represent data collected in this current survey, with a slight revision in the class I stoker item, and show, in addition, the total value for class I stokers and for classes II-V combined. In addition to the data reported in the current survey, stokers valued at \$842,000 were reported in the Census of Manufactures but not by type of stoker.

General Industrial Machinery, Not Elsewhere Classified (*Full Standard Industrial Classification title and number: General Industrial Machinery and Equipment, N.E.C., Industry 3569.*)—This industry comprises establishments engaged in manufacturing machinery and equipment for general industrial use, and for which no special classification is provided. Machine shops primarily engaged in producing machine and equipment parts usually on a job or order basis are classified in Industry 3599, and machine shops engaged exclusively in repair work are classified in repair industries. Included in this industry are closed type industrial heat exchangers; hydraulic jacks; steam condensers; packaging and wrapping machines (except food and tobacco); and centrifugals and separators, except cream.

In 1939, this industry was entitled "Industrial Machinery, N.E.C.," and included many products which are now classified in other industries. Examples of these are portable pneumatic tools (now in Industry 3531); water well machinery (Industry 3532); industrial vacuum cleaners (Industry 3584); mechanical water softeners (Industry 3589). The reports for 1939 have been retabulated on a basis comparable with 1947. Data for earlier years, however, are not available.

Of the total value of \$325 million of general industrial machinery, 26 percent was shipped by establishments classified in other industries. Establishments classified in the General Industrial Machinery Industry shipped \$240 million worth of general industrial machinery and \$67 million of other products such as fabricated steel plates, paper industries machinery, chemical industries machinery and equipment, rubber working machinery and equipment, etc.

GENERAL INDUSTRIAL MACHINERY AND EQUIPMENT

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TABLE 1.—GENERAL STATISTICS FOR THE UNITED STATES: 1947 AND EARLIER CENSUS YEARS

[Money figures in thousands of dollars. For explanation of column captions see GENERAL EXPLANATIONS]

INDUSTRY AND CENSUS YEAR	Number of establishments	All employees		Production and related workers		Value added by manufacture ¹	Cost of materials, fuel, electricity, and contract work	Value of products shipped ²
		Number (average for the year) ⁴	Salaries and wages, total ⁵	Number (average for the year) ⁶	Wages, total ⁷			
Pumps and compressors:								
1947	447	54,726	\$167,498	40,358	\$115,404	\$282,476	\$270,031	\$552,507
1939 ³	369	n.a.	n.a.	20,063	27,490	84,780	57,034	141,814
1937 ⁴	310	n.a.	n.a.	21,608	30,910	83,297	60,749	144,046
Elevators and escalators:								
1947	111	10,227	33,998	7,317	22,890	68,614	33,201	101,815
1939 ³	101	n.a.	n.a.	3,591	5,111	16,945	9,871	26,816
Conveyors:								
1947	253	24,578	84,084	18,073	55,024	143,515	104,892	248,407
1939 ³	115	n.a.	n.a.	5,733	8,608	22,931	17,192	40,123
Blowers and fans:								
1947	192	14,704	44,202	11,087	30,329	84,429	56,287	140,716
1939 ³	89	n.a.	n.a.	4,069	5,563	17,474	12,168	29,642
1937 ⁴	42	n.a.	n.a.	3,997	5,845	17,534	12,731	30,255
Industrial trucks and tractors:								
1947	197	13,974	42,038	10,652	29,660	81,789	80,814	162,603
1939 ³	70	n.a.	n.a.	3,652	4,576	13,181	17,174	30,355
Power-transmission equipment:								
1947	416	54,316	173,596	43,975	124,941	283,647	148,104	431,751
1939 ³	250	n.a.	n.a.	18,203	27,573	68,488	40,799	109,287
Industrial furnaces and ovens:								
1947	108	6,341	21,719	4,045	11,872	38,990	35,364	75,354
1939 ³	60	n.a.	n.a.	1,283	1,811	7,766	7,242	15,008
Mechanical stokers:								
1947	46	4,111	12,371	3,118	8,886	22,212	16,622	38,834
1939 ³	65	n.a.	n.a.	3,756	5,100	15,407	10,153	25,565
1937 ⁴	50	n.a.	n.a.	3,529	5,092	15,698	9,879	25,577
General industrial machinery, n.e.c.:								
1947	421	34,335	110,937	25,624	73,466	183,557	131,795	315,352
1939 ³	261	n.a.	n.a.	12,449	18,104	55,052	32,064	87,116

n.a.—Not available.

¹ Value of products less cost of materials, supplies, fuel, electricity, and contract work. See GENERAL EXPLANATIONS—Value added by manufacture.

² For 1947, value of products shipped; for prior years, value of products made. See GENERAL EXPLANATIONS—Value of products shipped.

³ Revised.

⁴ "Pumps and compressors" was formerly included with the discontinued classification "Pumps (hand and power), pumping equipment, and air compressors." Separate figures are, therefore, not available prior to 1937.

⁵ The reports for 1939 have been retabulated to provide figures comparable with those for 1947. No comparable figures are available for prior years.

⁶ "Blowers and fans" and "Mechanical stokers" were formerly included with the discontinued classification "Machinery, n.e.c." Separate figures are, therefore, not available prior to 1937.

TABLE 2.—GENERAL STATISTICS BY DIVISIONS AND STATES: 1947

[Money figures and man-hours in thousands. For explanation of column captions see GENERAL EXPLANATIONS]

INDUSTRY, DIVISION, AND STATE	Number of establishments	All employees		Production and related workers			Value added by manufacture	Cost of materials, fuel, electricity, and contract work	Value of products shipped	Expenditures for new plant and equipment
		Number (average for the year)	Salaries and wages, total	Number (average for the year)	Man-hours, total	Wages, total				
Pumps and compressors, total¹	447	54,726	\$167,498	40,358	85,505	\$115,404	\$282,476	\$270,031	\$552,507	\$14,631
New England	27	3,306	10,770	2,202	4,544	6,459	14,447	15,353	29,800	402
Massachusetts	19	2,239	6,951	1,582	3,397	4,551	8,112	11,124	19,236	251
Connecticut	8	1,067	3,819	620	1,147	1,908	6,335	4,229	10,564	151
Middle Atlantic	87	19,402	59,134	14,161	30,567	42,023	94,916	107,285	202,201	4,536
New York	34	6,524	19,468	4,760	10,247	14,602	38,366	41,386	79,752	724
New Jersey	20	7,934	25,554	5,457	11,873	16,970	33,980	43,481	77,461	2,628
Pennsylvania	33	4,944	14,112	3,945	8,447	10,451	22,570	22,418	44,988	1,184
East North Central	170	21,810	66,658	16,382	34,679	46,110	114,073	96,196	210,269	5,685
Ohio	46	7,214	21,503	5,370	11,126	14,937	37,895	32,154	70,049	1,880
Indiana	23	2,540	6,959	1,845	4,060	4,735	12,523	13,131	25,654	1,552
Illinois	49	6,640	20,777	4,970	10,411	14,153	38,394	28,950	67,344	1,279
Michigan	36	2,635	8,986	2,112	4,492	6,479	13,580	9,326	22,908	371
Wisconsin	16	2,781	8,433	2,085	4,590	5,806	11,681	12,035	24,316	603
West North Central	35	2,683	7,324	2,090	4,620	5,653	15,225	9,095	24,320	487
Minnesota	9	179	537	151	334	422	805	783	1,588	43
Iowa	7	1,108	3,184	903	1,956	2,404	5,556	2,893	8,449	221
Missouri	10	1,204	3,637	896	1,973	2,526	8,283	5,008	13,291	199
South	56	2,599	6,999	2,053	4,172	4,782	14,793	10,809	25,602	1,186
Maryland	6	283	730	185	325	397	1,195	639	1,884	168
Oklahoma	11	686	1,844	526	1,022	1,177	3,663	2,769	6,432	168
Texas	18	717	2,123	574	1,142	1,421	5,277	2,973	8,250	640
West	72	4,926	16,113	3,470	6,923	10,377	29,022	31,293	60,315	2,335
California	64	4,681	15,040	3,237	6,394	9,651	27,513	29,607	57,120	2,225

See footnotes at end of table.

TABLE 2.—GENERAL STATISTICS BY DIVISIONS AND STATES: 1947—Continued

INDUSTRY, DIVISION, AND STATE	Number of establishments	All employees		Production and related workers			Value added by manufacture	Cost of materials, fuel, electricity, and contract work	Value of products shipped	Expenditures for new plant and equipment
		Number (average for the year)	Salaries and wages, total	Number (average for the year)	Man-hours, total	Wages, total				
Elevators and escalators, total ¹	111	10,227	\$33,998	7,317	15,331	\$22,890	\$68,614	\$33,201	\$101,815	\$1,855
New England.....	8	332	1,077	222	473	653	1,067	871	2,638	26
Middle Atlantic.....	33	6,037	21,466	4,508	9,431	15,213	47,063	18,291	60,254	1,246
New York.....	18	2,835	9,517	2,205	4,282	6,077	24,137	8,062	32,700	154
Other Divisions.....	70	3,858	11,455	2,587	5,427	7,024	18,084	14,039	33,023	583
Illinois.....	8	978	2,802	735	1,537	1,976	4,745	3,409	8,244	128
Wisconsin.....	4	152	452	77	178	250	558	840	1,407	15
Minnesota.....	3	102	283	67	110	101	430	487	1,023	1
California.....	13	341	1,192	185	394	581	2,251	1,245	3,496	23
Conveyors, total ¹	253	24,578	84,084	18,073	37,865	55,024	143,515	104,892	248,407	5,703
New England.....	14	208	832	214	470	604	1,287	1,244	2,531	37
Middle Atlantic.....	50	3,604	11,973	2,277	4,803	6,636	22,874	12,426	35,300	1,016
New York.....	15	757	2,440	510	1,146	1,486	4,100	2,843	7,012	79
New Jersey.....	13	883	3,055	481	1,023	1,390	5,816	2,290	8,112	167
Pennsylvania.....	22	1,864	6,478	1,286	2,695	3,700	12,880	7,287	20,170	770
East North Central.....	113	16,528	58,942	12,526	26,176	40,082	98,190	74,165	172,304	3,529
Ohio.....	29	7,294	24,579	5,435	11,376	16,103	41,889	31,928	73,817	1,725
Indiana.....	9	615	1,848	504	1,128	1,353	2,920	2,072	4,902	109
Illinois.....	33	4,697	17,242	3,494	7,401	12,069	26,550	23,252	49,802	779
Michigan.....	33	3,202	13,139	2,520	5,158	9,109	23,753	13,840	37,602	740
Wisconsin.....	9	720	2,134	573	1,113	1,508	3,087	3,064	6,151	176
West North Central.....	33	1,205	3,823	921	2,007	2,350	7,403	7,147	14,550	391
Minnesota.....	9	494	1,348	364	763	877	1,921	2,201	4,182	111
Iowa.....	7	250	888	137	310	339	967	1,483	2,450	69
Missouri.....	8	436	1,282	323	730	916	3,429	2,351	5,780	132
South.....	18	2,059	5,380	1,522	3,131	3,528	8,115	6,366	14,481	478
Oklahoma.....	4	250	716	205	460	541	1,101	886	2,046	132
West.....	26	924	3,134	613	1,218	1,815	5,637	3,544	9,181	232
California.....	17	763	2,656	498	968	1,486	4,050	2,905	7,501	171
Blowers and fans, total ¹	192	14,794	44,202	11,087	23,389	30,329	84,429	55,287	140,716	3,551
New England.....	22	3,721	10,663	2,573	5,077	7,188	10,761	8,837	25,508	1,180
Middle Atlantic.....	29	2,154	6,876	1,711	3,644	4,908	13,073	9,176	22,848	222
New York.....	19	1,894	6,108	1,502	3,187	5,302	12,530	7,950	20,480	187
East North Central.....	64	5,862	17,825	4,457	9,281	12,553	36,098	24,086	60,784	1,382
Ohio.....	15	1,468	3,967	1,203	2,560	3,037	11,840	9,015	20,864	401
Illinois.....	21	1,128	3,443	860	1,847	2,468	6,007	5,300	11,973	181
Michigan.....	15	2,245	7,170	1,599	3,135	4,738	12,740	9,549	19,289	598
West North Central.....	16	311	967	226	492	593	1,755	1,348	3,103	69
Missouri.....	8	227	743	166	369	443	1,254	684	1,938	11
South.....	34	1,853	4,911	1,438	2,930	3,087	10,850	7,707	18,047	452
Louisiana.....	4	113	286	101	204	222	936	825	1,761	153
Texas.....	11	229	503	201	442	413	1,080	1,095	2,175	21
West.....	27	893	2,900	682	1,365	2,000	5,202	4,444	9,736	246
California.....	18	701	2,249	520	1,044	1,441	4,200	3,810	8,010	201
Industrial trucks and tractors, total ¹	197	13,974	42,038	10,552	22,460	29,660	81,789	80,814	162,603	5,463
New England.....	14	800	2,585	670	1,331	1,706	5,605	3,049	9,154	106
Middle Atlantic.....	38	2,985	9,006	2,228	4,798	6,183	14,771	15,744	30,515	2,506
New Jersey.....	12	340	955	285	599	726	1,933	1,434	3,307	60
East North Central.....	74	7,270	22,770	5,617	11,001	10,382	40,088	40,863	90,851	1,914
Ohio.....	27	2,688	8,584	2,087	4,487	6,004	17,379	15,321	32,700	631
Illinois.....	18	2,241	7,129	1,705	3,514	4,955	14,627	10,162	30,089	945
Michigan.....	17	1,942	5,993	1,400	3,145	4,565	15,563	14,039	29,602	298
West North Central.....	11	463	1,068	346	655	697	2,309	1,917	4,226	150
South Atlantic.....	23	529	923	458	918	767	1,934	1,127	3,061	119
Virginia.....	6	188	326	172	330	266	736	370	1,100	7
East South Central.....	5	184	358	162	344	260	624	496	1,120	50
West South Central.....	6	130	202	118	250	167	466	387	853	60
West.....	26	1,613	5,126	1,153	2,203	3,432	6,192	10,631	16,823	558
Oregon.....	5	992	3,149	702	1,342	2,179	4,190	8,659	12,849	111
California.....	15	226	901	151	296	466	978	915	1,893	(4)
Power-transmission equipment, total ¹	416	54,316	173,596	43,975	89,584	124,941	283,647	148,104	431,751	14,620
New England.....	38	4,302	12,762	3,561	7,569	9,270	20,308	8,208	28,516	1,110
Massachusetts.....	24	2,797	7,977	2,326	4,752	5,685	12,074	4,533	16,607	660
Middle Atlantic.....	106	12,132	36,786	9,122	18,709	26,412	59,063	35,930	95,599	3,288
New York.....	46	3,202	10,145	2,497	5,347	7,569	15,865	10,086	25,951	759
New Jersey.....	15	1,351	3,979	1,040	2,097	2,714	6,020	2,989	9,009	413
Pennsylvania.....	45	7,579	22,662	5,585	11,265	16,129	37,778	22,861	60,639	2,066
East North Central.....	189	34,012	112,427	28,076	56,620	80,586	185,124	93,063	278,787	9,089
Ohio.....	48	8,813	29,718	7,113	14,013	21,164	48,405	29,918	72,323	2,107
Indiana.....	21	9,530	30,290	8,001	15,648	21,900	50,101	22,860	72,951	1,988
Illinois.....	60	5,460	18,911	4,539	9,668	14,046	30,835	17,461	48,296	1,376
Michigan.....	43	6,091	19,453	5,330	10,383	13,629	31,192	15,541	46,733	2,139
Wisconsin.....	17	4,118	14,085	3,102	6,908	9,847	24,591	13,803	38,484	1,479
West North Central.....	22	972	2,680	852	1,791	2,131	3,962	2,352	6,314	207
Minnesota.....	6	291	945	252	533	700	1,120	574	1,703	86
Missouri.....	10	255	684	226	445	572	1,278	851	2,129	30
South.....	22	1,129	3,069	956	2,084	2,209	5,473	3,878	9,351	470
West.....	39	1,769	5,872	1,408	2,811	4,333	9,117	4,067	13,184	506
California.....	31	1,295	4,363	1,026	2,082	3,149	6,565	3,605	10,170	(4)

See footnotes at end of table.

GENERAL INDUSTRIAL MACHINERY AND EQUIPMENT

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TABLE 2.—GENERAL STATISTICS BY DIVISIONS AND STATES: 1947—Continued

INDUSTRY, DIVISION, AND STATE	Number of establishments	All employees		Production and related workers			Value added by manufacture	Cost of materials, fuel, electricity, and contract work	Value of products shipped	Expenditures for new plant and equipment
		Number (average for the year)	Salaries and wages, total	Number (average for the year)	Man-hours, total	Wages, total				
Industrial furnaces and ovens, total ¹	108	6,341	\$21,719	4,045	8,421	\$11,872	\$38,990	\$36,364	\$75,354	\$1,330
Northeast	45	2,205	7,375	1,477	3,084	4,256	13,435	10,528	23,963	519
New Jersey	10	544	1,877	396	870	1,274	3,549	3,199	6,748	239
Pennsylvania	13	700	2,490	447	930	1,280	4,116	3,507	7,623	114
North Central	50	3,657	13,074	2,191	4,516	6,675	23,175	22,941	46,116	652
Ohio	16	1,516	5,283	931	1,893	2,718	9,938	11,872	21,810	358
Indiana	5	119	592	89	182	252	620	892	1,512	-----
Illinois	13	1,041	3,727	535	1,185	1,829	6,860	5,450	12,310	137
Michigan	10	559	2,445	362	728	1,192	3,806	2,774	6,580	104
South	7	419	1,084	335	726	822	2,064	2,666	4,730	157
Pacific	6	60	186	42	95	119	316	229	545	2
Mechanical stokers, total ¹	46	4,111	12,371	3,118	6,062	8,886	22,212	16,622	38,834	1,313
Northeast	15	1,827	5,226	1,496	2,968	4,096	10,759	5,378	16,137	688
Other Divisions	31	2,284	7,145	1,622	3,094	4,790	11,453	11,244	22,697	625
Indiana	6	595	1,612	446	850	1,051	2,542	2,931	5,473	155
General industrial machinery, n.e.c., total ¹	421	34,335	110,937	25,624	53,126	73,466	183,557	131,795	315,352	8,090
New England	32	4,927	16,773	3,566	8,109	10,808	27,430	15,293	42,723	1,379
Massachusetts	18	3,528	11,493	2,622	5,854	7,878	18,090	10,679	28,759	1,052
Connecticut	7	1,115	4,530	790	1,749	2,252	7,722	4,070	11,792	220
Middle Atlantic	153	11,525	35,914	8,565	17,568	24,202	60,294	51,054	111,348	2,400
New York	69	5,157	16,369	3,840	8,123	11,104	27,686	25,197	52,883	918
New Jersey	37	2,721	8,560	2,004	4,193	5,922	11,824	11,372	23,196	377
Pennsylvania	47	3,647	10,985	2,721	5,252	7,176	20,784	14,485	35,269	1,105
East North Central	137	12,706	42,221	9,423	19,217	27,769	68,929	47,734	116,663	2,682
Ohio	34	2,727	8,415	2,228	4,450	6,048	14,197	11,146	25,343	350
Indiana	6	306	771	201	504	617	1,253	736	1,989	29
Illinois	45	2,703	9,103	2,090	4,395	6,272	16,403	11,033	27,436	707
Michigan	25	3,093	11,237	2,093	4,151	6,683	16,865	7,930	24,795	901
Wisconsin	27	3,877	12,695	2,751	5,717	8,149	20,211	16,889	37,100	695
West North Central	20	478	1,401	390	890	1,032	2,202	1,684	3,886	125
Minnesota	9	203	481	175	400	385	985	866	1,851	74
Missouri	6	215	788	169	399	540	1,022	742	1,764	19
South Atlantic	11	1,375	4,302	1,006	2,060	2,568	6,438	3,837	10,275	571
East South Central	8	1,141	3,182	971	1,948	2,487	4,843	2,604	7,447	245
West South Central	20	446	1,517	350	827	1,068	2,968	3,324	6,292	225
Oklahoma	8	122	412	107	266	377	951	1,125	2,076	66
Texas	12	324	1,105	243	561	691	2,017	2,199	4,216	159
West	40	1,737	5,627	1,253	2,507	3,532	10,453	6,265	16,718	463

¹ Withheld to avoid disclosing figures for individual companies.

² For each producing State not shown separately in the table (see GENERAL EXPLANATIONS "Disclosure of Data for Individual Companies"), there are shown below the number of establishments and, in parentheses, the number of employees for States represented by three or more companies, when possible.

Pumps and compressors: *West North Central*, North Dakota, 1; South Dakota, 1; Nebraska, 4 (138); Kansas, 3; *South*, Virginia, 2; West Virginia, 2; North Carolina, 2; South Carolina, 1; Georgia, 2; Florida, 4 (80); Kentucky, 1; Tennessee, 2; Mississippi, 1; Arkansas, 1; Louisiana, 3 (17); *West*, Idaho, 2; Colorado, 3; Oregon, 3 (205).

Elevators and escalators: *New England*, Massachusetts, 6; Connecticut, 2; *Middle Atlantic*, New Jersey, 5 (2,704); Pennsylvania, 10 (498); *Other Divisions*, Ohio, 11 (575); Indiana, 2; Michigan, 4 (155); Iowa, 2; Missouri, 1; Kansas, 1; Maryland, 2; Virginia, 2; North Carolina, 2; Georgia, 2; Kentucky, 3 (217); Tennessee, 2; Alabama, 1; Oklahoma, 1; Texas, 2; Colorado, 1; Washington, 1; Oregon, 2.

Conveyors: *New England*, Massachusetts, 12; Rhode Island, 2; *West North Central*, Nebraska, 3 (56); Kansas, 6 (50); *South*, Maryland, 1; Virginia, 1; North Carolina, 2; Georgia, 2; Kentucky, 2; Alabama, 1; Arkansas, 2; Texas, 3 (188); *West*, Colorado, 3; Nevada, 1; Washington, 3 (113); Oregon, 1.

Blowers and fans: *New England*, Massachusetts, 13 (2,657); Connecticut, 9 (1,064); *Middle Atlantic*, New Jersey, 4 (174); Pennsylvania, 6 (86); *East North Central*, Indiana, 9 (887); Wisconsin, 4 (134); *West North Central*, Minnesota, 5 (51); Iowa, 3 (33); *South*, North Carolina, 1; Georgia, 3 (58); Florida, 4 (165); Kentucky, 1; Tennessee, 3 (370); Alabama, 2; Mississippi, 1; Arkansas, 3 (34); Oklahoma, 1; *West*, Colorado, 1; Washington, 6 (150); Oregon, 2.

Industrial trucks and tractors: *New England*, Maine, 1; Massachusetts, 7 (704); Rhode Island, 1; Connecticut, 5; *Middle Atlantic*, New York, 15 (252); Pennsylvania, 11 (2,393); *East North Central*, Indiana, 5 (213); Wisconsin, 7 (186); *West North Central*, Minnesota, 5 (245); Iowa, 2; Missouri, 2; Kansas, 2; *South Atlantic*, Maryland, 3 (12); West Virginia, 2; North Carolina, 2; South Carolina, 2; Georgia, 4 (200); Florida, 4 (11); *East South Central*, Kentucky, 2; Tennessee, 3; *West South Central*, Arkansas, 4; Texas, 2; West, Montana, 1; Colorado, 1; Utah, 1; Washington, 3 (100).

Power-transmission equipment: *New England*, Maine, 1; New Hampshire, 1; Connecticut, 12; *West North Central*, Iowa, 3 (317); Kansas, 3 (109); *South*, Maryland, 2; District of Columbia, 1; Virginia, 1; West Virginia, 1; North Carolina, 2; South Carolina, 1; Georgia, 2; Kentucky, 1; Tennessee, 1; Louisiana, 2; Oklahoma, 2; Texas, 6 (253); *West*, Colorado, 3 (196); Washington, 5 (278).

Industrial furnaces and ovens: *Northeast*, Massachusetts, 5 (79); Rhode Island, 3 (94); Connecticut, 4 (149); New York, 10 (639); *North Central*, Wisconsin, 2; Minnesota, 2; Iowa, 1; Missouri, 1; *South*, Maryland, 1; West Virginia, 1; Florida, 1; Kentucky, 2; Alabama, 1; Mississippi, 1; *Pacific*, Washington, 1; California, 5.

Mechanical stokers: *Northeast*, Massachusetts, 2; New York, 1; Pennsylvania, 12 (1,612); *Other Divisions*, Ohio, 9 (835); Illinois, 6 (84); Michigan, 2; Wisconsin, 3 (73); Missouri, 1; North Dakota, 2; Washington, 1; Oregon, 1.

General industrial machinery, n.e.c.: *New England*, New Hampshire, 3; Vermont, 1; Rhode Island, 3 (177); *West North Central*, Iowa, 3; Nebraska, 1; Kansas, 1; *South Atlantic*, Delaware, 1; Maryland, 3 (981); West Virginia, 2; North Carolina, 2; Georgia, 1; Florida, 2; *East South Central*, Kentucky, 3 (349); Alabama, 5 (792); *West*, Colorado, 2; Washington, 2; Oregon, 2; California, 34 (1,604).

TABLE 3.—DETAILED STATISTICS FOR THE UNITED STATES: 1947

[Money figures in thousands of dollars. For explanation of line captions see GENERAL EXPLANATIONS]

ITEM	Industry								
	Pumps and compressors	Elevators and escalators	Conveyors	Blowers and fans	Industrial trucks and tractors	Power-transmission equipment	Industrial furnaces and ovens	Mechanical stokers	General industrial machinery, n.e.c.
ALL ESTABLISHMENTS									
Number of establishments.....	447	111	253	192	197	416	108	46	421
All employees:									
Number (average for the year).....	54,726	10,227	24,578	14,794	13,974	54,316	6,341	4,111	34,335
Salaries and wages, total.....	\$167,498	\$33,998	\$84,084	\$44,202	\$42,038	\$173,596	\$21,710	\$12,371	\$110,937
Production and related workers:									
Number (average for the year).....	40,358	7,317	18,073	11,087	10,652	43,975	4,045	3,118	25,624
Man-hours, total..... thousands.....	85,505	15,331	37,865	23,389	22,400	89,584	8,421	6,062	63,126
Wages, total.....	\$115,404	\$22,890	\$55,024	\$30,329	\$29,060	\$124,941	\$11,872	\$8,886	\$73,406
Value added by manufacture.....	\$282,476	\$68,614	\$143,515	\$84,429	\$81,789	\$283,647	\$38,000	\$22,212	\$183,557
ESTABLISHMENTS REPORTING DETAILED STATISTICS									
Number of establishments.....	372	111	218	192	197	328	108	46	322
All employees:									
Number (average for the year).....	54,346	10,227	24,420	14,794	13,974	53,844	6,341	4,111	33,563
Salaries and wages, total.....	\$166,526	\$33,998	\$83,716	\$44,202	\$42,038	\$172,386	\$21,719	\$12,371	\$108,734
Production and related workers:									
Number (average for the year).....	39,987	7,317	17,915	11,087	10,652	43,512	4,045	3,118	24,909
Man-hours, total..... thousands.....	84,661	15,331	37,549	23,389	22,400	88,687	8,421	6,062	51,704
Wages, total.....	\$114,490	\$22,890	\$54,656	\$30,329	\$29,060	\$123,784	\$11,872	\$8,886	\$71,605
Value added by manufacture.....	\$281,073	\$68,614	\$143,076	\$84,429	\$81,789	\$281,007	\$38,000	\$22,212	\$180,296
Number of employees for pay period ended nearest Oct. 15:									
All employees.....	53,801	10,241	24,763	14,625	14,118	52,919	6,168	4,191	33,627
Male.....	47,630	9,244	22,624	12,916	12,596	44,122	5,627	3,835	30,025
Female.....	6,171	997	2,139	1,709	1,522	8,797	541	356	3,602
Production and related workers.....	39,561	7,259	18,063	10,861	10,766	42,587	3,935	3,200	24,889
Male.....	37,969	7,051	17,647	10,278	10,462	37,138	3,874	3,183	24,026
Female.....	1,592	208	416	583	304	5,449	61	17	863
Force-account construction workers.....	33		33			24			
Administrative, supervisory, sales, and all other.....	14,207	2,982	6,667	3,704	3,352	10,308	2,229	991	8,738
Male.....	9,628	2,193	4,944	2,638	2,134	6,060	1,740	652	5,999
Female.....	4,579	789	1,723	1,126	1,218	3,348	480	339	2,739
All employees, number by month:									
January.....	54,832	10,049	24,071	14,372	13,728	54,960	6,510	3,969	34,050
February.....	55,271	10,234	24,121	14,701	13,874	55,612	6,575	3,990	34,390
March.....	55,608	10,387	24,020	14,993	13,933	55,708	6,554	4,070	34,492
April.....	54,959	10,487	23,868	15,051	13,986	55,066	6,400	4,000	34,151
May.....	54,494	10,072	23,733	15,192	13,882	54,542	6,388	4,010	33,214
June.....	54,440	10,278	24,340	15,277	13,934	53,919	6,340	4,006	33,243
July.....	53,741	10,160	24,591	14,635	13,780	51,610	6,358	4,180	32,371
August.....	53,420	10,247	24,796	14,790	13,915	53,024	6,305	4,371	32,453
September.....	53,474	10,225	24,811	14,509	14,065	52,938	6,190	4,420	33,415
October.....	53,801	10,241	24,763	14,585	14,118	52,919	6,168	4,191	33,627
November.....	53,843	10,216	24,805	14,526	14,143	52,610	6,105	4,108	33,549
December.....	54,014	10,120	24,977	14,669	14,182	52,919	6,148	4,005	33,683
Cost of materials, fuel, electricity, and contract work.....	\$268,732	\$33,201	\$104,423	\$56,287	\$80,814	\$146,343	\$36,364	\$16,622	\$129,401
Materials, parts, containers, and supplies.....	259,679	31,669	98,803	54,574	74,876	137,884	35,695	16,030	121,813
Fuels, total.....	2,870	321	636	534	455	2,714	287	258	1,108
Bituminous coal.....	1,189	156	401	294	100	761	50	107	316
Anthracite.....	105	3	14	3	5	80	6	2	41
Coke.....	602	38	154	34	56	331	8	105	121
Fuel oils.....	526	68	180	138	158	801	81	27	398
Gas.....	412	39	175	55	63	706	87	10	213
Other fuels.....	36	17	12	10	13	35	29	7	19
Purchased electric energy.....	2,291	409	1,123	580	505	3,192	290	248	1,715
Contract and commission work.....	3,892	772	3,561	599	4,918	2,563	122	116	4,765
Value of inventories:									
Beginning of year, total.....	\$127,304	\$25,822	\$40,752	\$27,981	\$31,542	\$71,565	\$12,219	\$11,005	\$66,183
Finished products.....	37,930	8,139	8,125	3,060	8,734	19,089	1,516	2,637	13,144
Materials, supplies, and work in process.....	89,374	17,683	32,627	24,921	22,808	52,476	10,703	8,368	53,039
End of year, total.....	147,667	30,455	50,181	36,740	37,240	82,241	12,068	11,918	75,004
Finished products.....	47,190	8,947	11,762	5,277	10,109	27,350	1,351	3,341	16,949
Materials, supplies, and work in process.....	100,477	21,508	38,419	31,463	27,131	54,891	10,717	8,577	58,055
Expenditures for plant and equipment:									
New plant and equipment.....	\$14,631	\$1,855	\$5,703	\$3,551	\$5,463	\$14,020	\$1,330	\$1,313	\$8,090
Construction and major alteration of fixed plants.....	6,217	477	2,180	1,215	2,722	2,092	406	660	3,434
Buildings.....	5,421	362	2,050	1,185	2,641	1,917	432	647	3,153
Other construction.....	796	115	130	30	81	175	34	13	281
Machinery and equipment.....	8,414	1,378	3,523	2,336	2,741	12,528	864	653	4,656
Production machinery and equipment.....	6,629	952	2,844	1,980	1,895	11,379	740	589	3,805
Other machinery and equipment.....	1,785	426	679	356	846	1,149	124	64	851
Used plant and equipment, and land.....	6,031	227	444	201	386	1,633	63	289	2,164
Number of highway-type motor vehicles owned or leased:									
Trucks.....	650	126	237	149	135	257	51	48	270
By manufacturer's rated capacity:									
Under 1½ tons.....	314	70	79	59	52	110	25	20	133
1½ tons.....	190	31	93	63	51	89	19	23	79
Over 1½ tons and less than 3½ tons.....	109	12	42	17	20	37	0	4	28
3½ tons and less than 6 tons.....	23	4	6	6	5	11	1		9
6 tons and over.....	23	9	18	4	7	10		1	21
By body type:									
Van.....	5	1	4	13	2	9			4
Stake or platform.....	251	42	144	67	69	114	24	23	136
Panel or light delivery.....	264	58	64	53	40	91	23	21	84
All other trucks.....	139	25	25	16	24	43	4	4	46
Truck tractors.....	16	8	14	5	4			2	11
Trailers and semitrailers.....	18	8	15	5	4			2	14

TABLE 4.—SELECTED GENERAL STATISTICS BY SIZE OF ESTABLISHMENT, FOR THE UNITED STATES: 1947

[Money figures in thousands of dollars. For explanation of line captions see GENERAL EXPLANATIONS. Data which cannot be shown without disclosing information for individual companies have been combined with figures for other groups. A ^d appears in the column where the figure has been omitted and the combined figure is printed in italics]

INDUSTRY AND ITEM	Total, all establishments	Establishments with an average of—									
		1-4 em- ployees	5-9 em- ployees	10-19 em- ployees	20-49 em- ployees	50-99 em- ployees	100-249 em- ployees	250-499 em- ployees	500-999 em- ployees	1,000-2,499 employees	2,500 employees and over
Pumps and compressors:											
Number of establishments.....	447	85	69	56	73	58	50	31	16	8	1
Number of employees (average for the year).....	54,726	197	467	809	2,297	4,049	7,585	10,024	11,385	17,313	(d)
Value added by manufacture.....	\$282,476	\$1,029	\$1,899	\$4,263	\$13,483	\$20,195	\$40,654	\$54,133	\$62,416	\$84,404	(d)
Elevators and escalators:											
Number of establishments.....	111	14	12	23	31	14	10	3	2	2	
Number of employees (average for the year).....	10,227	29	84	348	993	972	1,579	871	(d)	6,551	
Value added by manufacture.....	\$68,614	\$173	\$260	\$1,710	\$4,966	\$4,658	\$8,542	\$5,952	(d)	\$42,553	
Conveyors:											
Number of establishments.....	253	40	37	48	53	27	22	14	9	2	1
Number of employees (average for the year).....	24,578	100	255	644	1,722	1,876	3,644	5,095	5,658	(d)	5,584
Value added by manufacture.....	\$143,515	\$459	\$1,230	\$3,169	\$8,720	\$10,084	\$22,569	\$32,444	\$36,224	(d)	\$28,616
Blowers and fans:											
Number of establishments.....	192	34	34	31	47	20	15	5	3	2	1
Number of employees (average for the year).....	14,794	95	221	428	1,355	1,431	2,150	1,979	1,967	5,168	(d)
Value added by manufacture.....	\$84,429	\$590	\$1,385	\$2,243	\$8,400	\$7,733	\$12,897	\$13,092	\$12,430	\$25,669	(d)
Industrial trucks and tractors:											
Number of establishments.....	197	48	28	43	35	16	15	5	5	2	
Number of employees (average for the year).....	13,974	103	182	594	1,250	1,136	2,124	1,624	(d)	6,961	
Value added by manufacture.....	\$81,789	\$522	\$959	\$2,989	\$5,908	\$5,283	\$12,053	\$8,432	(d)	\$45,643	
Power-transmission equipment:											
Number of establishments.....	416	64	57	64	78	52	47	29	15	8	2
Number of employees (average for the year).....	54,316	151	370	905	2,392	3,682	7,188	10,500	9,408	19,722	(d)
Value added by manufacture.....	\$283,647	\$699	\$1,725	\$3,643	\$12,286	\$20,508	\$38,059	\$54,543	\$53,614	\$98,570	(d)
Industrial furnaces and ovens:											
Number of establishments.....	108	19	12	18	27	12	12	8			
Number of employees (average for the year).....	6,341	52	75	230	767	725	1,727	2,765			
Value added by manufacture.....	\$38,990	\$193	\$363	\$1,142	\$4,616	\$4,648	\$9,643	\$18,385			
Mechanical stokers:											
Number of establishments.....	46	12	5	6	9	5	3	3	3		
Number of employees (average for the year).....	4,111	24	32	86	287	343	519	980	1,840		
Value added by manufacture.....	\$22,212	\$62	\$92	\$335	\$1,369	\$964	\$4,640	\$4,855	\$9,895		
General industrial machinery, n.e.c.:											
Number of establishments.....	421	84	55	61	88	49	52	13	17	2	
Number of employees (average for the year).....	34,335	194	352	854	2,707	3,232	8,110	4,417	14,469	(d)	
Value added by manufacture.....	\$183,557	\$1,001	\$1,897	\$4,370	\$15,386	\$17,041	\$50,050	\$23,879	\$68,633	(d)	

TABLE 5.—VALUE OF PRODUCTS SHIPPED, BY BROAD CLASSES OF PRODUCTS, FOR THE UNITED STATES: 1947

[The first column shows the total value of shipments of the specified industry, divided among: (A) products classified in (primary to) the industry, (B) products classified in other industries (secondary to the specified industry), and (C) miscellaneous receipts. The second column shows the value of shipments of the primary products of the specified industry reported by establishments in other industries. The third column shows the total value of shipments of the primary products of the specified industry by all reporting manufacturers]

[Money figures in thousands of dollars]

PUMPS AND COMPRESSORS INDUSTRY	Shipped by—			CONVEYORS INDUSTRY	Shipped by—		
	Pumps and com- pressors industry	Other industries	All industries		Conveyors industry	Other industries	All industries
Total shipments by the industry.....	\$552,507		\$519,785	Total shipments by the industry.....	\$248,407		\$234,074
A. Pumps and compressors.....	422,809	\$96,956	519,765	A. Conveyors and conveying equipment.....	186,150	\$47,924	234,074
3561 01-32. Industrial pumps.....	140,405	18,560	158,965	Overhead traveling cranes and mono- rail systems.....	22,760	14,482	37,242
3561 36 Domestic water systems, including water system pumps sold sepa- rately.....	52,077	4,616	56,693	Conveyors and conveying equip- ment, except overhead traveling cranes and monorail systems.....	161,531	31,937	193,468
3561 42-48. Air compressors.....	82,544	19,112	101,656	Conveyors and conveying equip- ment, not reported by type.....	1,859	1,505	3,364
3561 33-37-40. All other pumps, gas compressors, and pumping equipment.....	147,783	54,668	202,451	B. Secondary products.....	52,775		
B. Secondary products.....	106,835			Excavating and road-construction and maintenance machinery.....	3,827		
General industrial machinery.....	13,572			Other secondary products (mechan- ical power-transmission equip- ment, industrial machinery, etc.).....	48,948		
Diesel engines.....	8,665			C. Miscellaneous receipts.....	9,482		
Oil-field machinery and tools.....	3,501			Contract and commission work.....	1,748		
Gray-iron castings.....	2,919			Repair work.....	5,832		
Other secondary products (valves, mechanical power-transmission equip., construction machinery, blowers and fans, etc.).....	77,778			Scrap and salable refuse.....	418		
C. Miscellaneous receipts.....	22,863			Nonmanufacturing activities.....	1,486		
Contract and commission work.....	2,869						
Repair work.....	15,788						
Scrap and salable refuse.....	1,748						
Nonmanufacturing activities.....	2,958						

CENSUS OF MANUFACTURES: 1947

TABLE 5.—VALUE OF PRODUCTS SHIPPED, BY BROAD CLASSES OF PRODUCTS, FOR THE UNITED STATES: 1947—Continued

ELEVATORS AND ESCALATORS INDUSTRY	Shipped by—		
	Elevators and escalators industry	Other industries	All industries
Total shipments by the industry	\$101,815		\$06,421
A. Elevators and moving stairways.....	87,938	\$8,483	
B. Secondary products (refrigeration machinery, service-industry and household machines, etc.).....	7,537		
C. Miscellaneous receipts.....	6,340		
Repair work.....	2,800		
Other receipts.....	540		
BLOWERS AND FANS INDUSTRY	Shipped by—		
	Blowers and fans industry	Other industries	All industries
Total shipments by the industry	\$140,716		\$120,913
A. Blowers, exhaust and ventilating fans.....	101,891	\$28,022	
B. Secondary products.....	33,853		
Sheet-metal products.....	2,967		
Other secondary products (cooking and heating apparatus, refrigeration machinery, etc.).....	30,886		
C. Miscellaneous receipts.....	4,972		
Repair work.....	2,784		
Other receipts.....	2,188		
INDUSTRIAL TRUCKS AND TRACTORS INDUSTRY	Shipped by—		
	Industrial trucks and tractors industry	Other industries	All industries
Total shipments by the industry	\$162,603		\$156,784
A. Industrial trucks and tractors.....	131,222	\$25,532	
B. Secondary products (hardware, construction machinery, conveyors, etc.).....	24,274		
C. Miscellaneous receipts.....	7,107		
Repair work.....	4,155		
Nonmanufacturing activities.....	2,174		
Other receipts.....	778		
INDUSTRIAL FURNACES AND OVENS INDUSTRY	Shipped by—		
	Industrial furnaces and ovens industry	Other industries	All industries
Total shipments by the industry	\$75,354		\$84,563
A. Industrial furnaces and ovens.....	62,701	\$21,862	
Electric industrial furnaces and ovens.....	12,181	4,122	16,303
Fuel-fired industrial furnaces and ovens.....	28,412	5,901	34,313
Parts and attachments for industrial furnaces and ovens.....	13,413	9,802	23,215
Industrial furnaces and ovens, not reported by kind.....	8,695	2,037	10,732
B. Secondary products (heating and cooking equipment, sheet metal work, etc.).....	10,469		
C. Miscellaneous receipts.....	2,184		
POWER-TRANSMISSION EQUIPMENT INDUSTRY	Shipped by—		
	Power-transmission equipment industry	Other industries	All industries
Total shipments by the industry	\$431,751		
A. Mechanical power-transmission equipment.....	365,869	\$60,413	\$426,282
Plain bearings and bushings.....	95,573	20,516	122,089
Speed reducers, gears, and industrial high speed drives.....	102,097	10,306	112,403
Other mechanical power-transmission equipment.....	162,625	22,531	185,156
Mechanical power-transmission equipment, not reported by type.....	5,574	1,060	6,634
B. Secondary products.....	55,703		
Gray-iron castings.....	2,862		
Ball and roller bearings.....	4,908		
Machine shop products.....	1,032		
All other secondary products (metal-working machinery, industrial machinery, sewing machine parts, motor vehicle parts, etc.).....	46,901		
C. Miscellaneous receipts.....	10,179		
Contract and commission work.....	5,066		
Repair work.....	1,107		
Scrap and salable refuse.....	3,064		
Nonmanufacturing activities.....	342		
MECHANICAL STOKERS INDUSTRY	Shipped by—		
	Mechanical stokers industry	Other industries	All industries
Total shipments by the industry	\$38,834		\$36,033
A. Mechanical stokers.....	26,830	\$9,203	
B. Secondary products.....	11,034		
Oil burners.....	2,046		
Other secondary products (heating and cooking apparatus, construction machinery, etc.).....	8,988		
C. Miscellaneous receipts.....	970		
GENERAL INDUSTRIAL MACHINERY, N. E. C., INDUSTRY	Shipped by—		
	General industrial machinery, n.e.c., industry	Other industries	All industries
Total shipments by the industry	\$315,352		\$324,969
A. Primary products of the industry.....	240,032	\$84,917	
Heat exchangers.....	39,715	12,912	52,627
General industrial machinery and equipment, not elsewhere classified.....	200,337	72,005	272,342
B. Secondary products.....	66,080		
Fabricated steel plate.....	3,635		
Paper industries machinery.....	1,714		
Chemical manufacturing industries machinery and equipment.....	3,555		
Rubber-working machinery and equipment.....	1,388		
Other secondary products (valves, motor-vehicle parts and accessories, aircraft parts, etc.).....	56,288		
C. Miscellaneous receipts.....	8,620		
Contract and commission work.....	2,623		
Repair work.....	5,186		
Other receipts.....	811		

TABLE 6.—QUANTITY AND VALUE OF PRODUCTS, TOTALS FOR THE UNITED STATES: 1947 AND 1939

(Money figures in thousands of dollars)

PRODUCT	1947		1939	
	Quantity (units)	Value f.o.b. plant	Quantity (units)	Value f.o.b. plant
Industrial pumps ¹		\$158,965		n.a.
Reciprocating pumps:				
Direct-acting steam-driven.....	12,422	6,328	6,548	\$2,836
Power-operated, other than steam.....	14,561	7,591	3,828	2,643
Turbine pumps, vertical, including deep-well.....	24,576	31,015	n.a.	n.a.
Centrifugal pumps:				
1½ inch discharge outlet and under ²	436,211	25,757		
Average value under \$50.....	313,274	8,946		
Average value \$50 and over.....	122,937	16,811		
2 and 2½ inch discharge outlet.....	85,415	13,163		
3 inch discharge outlet.....	29,632	8,738	(1)	18,630
4 and 5 inch discharge outlet.....	20,311	11,084		
6 and 7 inch discharge outlet.....	4,924	4,945		
8 to and including 12 inch discharge outlet.....	3,791	6,170		
Over 12 inch discharge outlet.....	1,091	5,047		
Rotary pumps: ⁴				
100 lbs. per square inch and under, designed pressure:				
10 gals. per minute and under, designed capacity ³	959,733	10,618		
Average value under \$20.....	917,822	8,659		
Average value \$20 and over.....	41,911	1,959		
11-25 gals. per minute, designed capacity ³	57,510	1,792		
Average value under \$20.....	31,329	462		
Average value \$20 and over.....	26,181	1,330		
26-100 gals. per minute, designed capacity.....	61,713	3,443		
101-200 gals. per minute, designed capacity.....	3,911	611		
201-500 gals. per minute, designed capacity.....	1,468	355		
501 and over gals. per minute, designed capacity.....	582	750		
101 to and including 500 p.s.i., designed pressure:				
10 gals. per minute and under, designed capacity ³	25,799	1,032	(1)	8,450
Average value under \$50.....	15,100	187		
Average value \$50 and over.....	10,699	845		
11-25 gals. per minute, designed capacity.....	2,498	845		
26-100 gals. per minute, designed capacity.....	3,953	980		
101-200 gals. per minute, designed capacity.....	735	351		
201-500 gals. per minute, designed capacity.....	550	480		
501 and over gals. per minute, designed capacity.....	263	616		
Over 500 p.s.i., designed pressure:				
10 gals. per minute and under, designed capacity.....	65,413	2,057		
11-25 gals. per minute, designed capacity.....	20,966	1,285		
26-100 gals. per minute, designed capacity.....	9,545	1,364		
101 and over gals. per minute, designed capacity.....	8,872	1,145		
Other industrial pumps.....		11,403		4,573
Domestic water systems, including water system pumps, sold separately	762,855	56,693		
Deepwell.....	305,148	28,342		
Jet.....	244,999	22,115		
Nonjet.....	60,149	6,227		
Under 1 horsepower.....	53,259	4,941		
1-3 horsepower.....	6,267	909		
Over 3 horsepower.....	623	377	242,543	16,272
Shallow-well.....	457,707	28,351		
Jet.....	116,141	7,579		
Nonjet.....	341,566	20,772		
Under 500 gals. per hour.....	289,835	16,453		
500 gals. per hour and over.....	51,731	4,319		
Air compressors		101,656		21,233
Stationary (including automotive type):				
Up to and including 7½ horsepower.....	171,104	29,251		
Over 7½ horsepower to and including 100 horsepower.....	11,580	15,319		
Over 100 horsepower to and including 250 horsepower.....	583	4,055		
Over 250 horsepower.....	583	13,842		n.a.
Portable:				
150 cubic ft. of free air per minute and under.....	48,137	19,104		
Over 150 to and including 400 cubic ft. free air per minute.....	3,641	15,842		
Over 400 cubic ft. free air per minute.....	444	3,370		
Air compressors, not reported by type.....		1,073		
All other pumps, gas compressors, and pumping equipment		202,451		n.a.
Oil-well and oil-field pumps.....		27,582		5,616
Subsurface pumps for oil-well pumping, including parts and accessories.....		13,063		
Slush pumps.....	1,331	10,971		n.a.
Other oil-well and oil-field pumps.....		3,548		
Domestic hand and windmill pumps.....	n.a.	2,711		1,774
Pitcher.....	174,826	562		
Other hand and windmill pumps.....	193,706	1,789		n.a.
Other hand and windmill pumps, not reported by type.....	n.a.	389		
Domestic hand and windmill pumps, not reported by type.....	150,168	766	n.a.	773
Cylinders for domestic water systems, sold separately.....	54,890	1,430	34,848	756
Pump jacks for domestic water systems, sold separately.....	63,296	4,520	n.a.	n.a.
Dry-vacuum pumps.....	20,410	4,208	n.a.	1,699
Vacuum pumps, other than dry-vacuum.....	3,136	29,203	n.a.	n.a.
Gas compressors (excluding compressors for ice-making, refrigerating and air-conditioning units).....		2,354		n.a.
Power sprayers for liquids (except agricultural).....		78,054		14,866
Parts and attachments for pumps, air and gas compressors, and pumping equipment.....		51,623		n.a.
Other pumps, compressors, and pumping equipment (including paint spraying outfits and equipment and a small amount of pumps and compressors, not reported by type).....		96,421		20,498
Elevators and moving stairways	6,734	47,951		
Elevators.....	2,682	25,296		
Electric passenger (except residence lifts).....	2,633	18,721		
Electric freight.....	1,419	3,934		18,244
Hydraulic freight.....				
Other elevators, moving stairways, and parts and attachments for elevators and moving stairways, sold separately.....		34,894		
Automobile lifts (service station and garage type).....	42,920	13,576	18,332	4,254

See footnotes at end of table.

TABLE 6.—QUANTITY AND VALUE OF PRODUCTS, TOTALS FOR THE UNITED STATES: 1947 AND 1939—Continued

PRODUCT	1947		1939	
	Total shipments and interplant transfers		Total production for sale and interplant transfer	
	Quantity (units)	Value f.o.b. plant	Quantity (units)	Value f.o.b. plant
Overhead traveling cranes and monorail systems		\$37,242		n.a.
Overhead traveling cranes:				
Electric.....	2,149	27,987	n.a.	\$6,272
Hand power.....	1,042	1,258		
Monorail systems.....		7,997		(?)
Conveyors and conveying equipment, except overhead traveling cranes and monorail systems		193,468		n.a.
Farm elevators, portable:				
Single chain:			n.a.	(?)
With flights under 12 inches wide.....	18,010	2,668		
With flights 12 inches wide and larger.....	18,772	220		
Double chain.....	18,032	5,931		
Auger type.....	19,250	2,356		
Farm elevators, stationary.....	1,301	603		
Parts and attachments for farm elevators, and farm elevators, not reported by type.....		4,303		
Conveyors and conveying systems.....		142,573		7 29,774
Gravity conveyors (skate wheel and roller).....		10,262		1,608
Power conveyors (excluding overhead trolley conveyor systems, pneumatic tube systems, and portable conveyors).....		17,604		
Overhead trolley conveyor systems.....		10,904		
Pneumatic tube systems (including foot-power units).....		2,200		7 28,076
Portable conveyors (except farm).....		14,583		
Other conveyors and conveying systems (including specially engineered conveyor installations).....		87,020		
Parts, attachments, and accessories for conveyors and conveying systems, sold separately.....		34,754		n.a.
Conveyors and conveying equipment, not reported by type.....		3,364		
Mechanical stokers		36,033		23,565
Mechanical stokers, by capacity:				
Under 61 lbs. (class I).....	50,905	7,008	90,902	11,652
61 to 100 lbs. (class II).....	4,860			
101 to 300 lbs. (class III).....	4,194		10,040	8,623
301 to 1,200 lbs. (class IV).....	2,085	10,482		
1,201 lbs. and over (class V).....	1,033			
Not reported by capacity.....		842		
Parts, attachments, and accessories for mechanical stokers, sold separately.....		17,641		3,290
Electric industrial furnaces and ovens		16,303		4,154
Metal melting furnaces.....		2,884		
Metal processing and heat treating furnaces, including porcelain enameling furnaces.....	438	1,792		
Nonmetallic furnaces and kilns.....	n.a.	10,482	n.a.	n.a.
Industrial ovens, except infra-red.....	n.a.	207		
Infra-red industrial ovens.....	n.a.	858		
		909		
Fuel-fired industrial furnaces and ovens		34,313		8,354
Metal melting furnaces.....		1,029		
Metal processing and heat treating furnaces, including porcelain enameling furnaces.....	n.a.	15,409	n.a.	0,461
Nonmetallic furnaces and kilns.....	2,086	6,408		
Industrial ovens.....	n.a.	10,687	n.a.	1,893
Parts, attachments, and components for industrial furnaces and ovens, sold separately ⁹		23,215		n.a.
Industrial furnaces and ovens, not reported by type ¹⁰		10,732		
Plain bearings and bushings		122,089		n.a.
Unmounted:				
Automobile, truck, and bus type.....		83,002		37,192
Other types.....		34,382		
Mounted.....		4,705		(11)
Speed reducers, gears, and industrial high speed drives, fixed ratio		112,403		11 35,122
Industrial high speed drives, fixed ratio.....		6,782		(11)
Speed reducers, fixed ratio (enclosed):				
Worm gears.....		12,201		
Gearmotors (reducer element only).....		12,376		14,418
Petroleum type gearing.....		580		
Other speed reducers, fixed ratio (enclosed).....		17,505		
Gears, pinions, and racks, unmounted:				
Fine pitch (20 pitch and finer).....		0,007		
Other than fine pitch (less than 20 pitch):				
Railway type gears.....		3,699		20,704
Aircraft engine gears.....		2,974		
Other gears, pinions, and racks (less than 20 pitch).....		47,578		
Speed reducers, gears, and industrial high speed drives (fixed ratio), not reported by type.....		2,011		
Other mechanical power-transmission equipment		185,156		43,929
Variable ratio speed drives.....		12,211		4,269
Clutches:				
Friction type.....		15,097		
Other types (including hydraulic couplings).....		5,414		
Couplings (except hydraulic):				
Rigid type.....		626		
Flexible type.....		9,072		
Universal joints.....		0,251		
Chains for sprocket drives.....		53,400		11 39,660
Sprockets.....		15,623		
Pulleys.....		10,316		
Sheaves:				
Single drive.....		6,814		
Multiple drive.....		10,692		
Other mechanical power-transmission equipment, except automobile, truck, and bus.....		33,631		
Mechanical power-transmission equipment, not reported by type		6,634		
Heat exchangers, closed types, industrial		52,627		n.a.

See footnotes at end of table.

GENERAL INDUSTRIAL MACHINERY AND EQUIPMENT

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TABLE 6.—QUANTITY AND VALUE OF PRODUCTS, TOTALS FOR THE UNITED STATES: 1947 AND 1939—Continued

PRODUCT	1947		1939	
	Total shipments and interplant transfers		Total production for sale and interplant transfer	
	Quantity (units)	Value f.o.b. plant	Quantity (units)	Value f.o.b. plant
General industrial machinery and equipment, not elsewhere classified				
Hydraulic jacks		\$272,342		n.a.
Steam condensers		18,793		n.a.
Packaging and wrapping machines (except food and tobacco)		10,669		n.a.
Centrifugals and separators, except cream		33,178		12 \$6,653
Other general industrial machinery and equipment, not elsewhere classified		11,946		n.a.
		197,756		n.a.
Industrial trucks, tractors, trailers, portable elevators, and accessories				
Powered trucks, operator walking		156,751		
Powered trucks, operator riding	7,469	8,053		
Fork trucks	20,385	66,437		
Electric (storage battery and gasoline-electric powered)	17,943	56,970		
Gasoline powered	3,522	15,212		
Other trucks	14,421	41,758		
Electric (storage battery and gasoline-electric powered)	2,442	9,467		
Gasoline powered	1,300	5,667		
Tractors	1,142	3,800	(16)	(16)
Electric (storage battery and gasoline-electric powered)	2,460	3,890		
Gasoline powered	199	367		
Portable elevators ¹¹	2,261	3,523		
Hand trucks and trailers	4,653	3,162		
Hand lift		29,430		
Other ¹²	n.a.	8,373		
Parts, attachments, and miscellaneous equipment, sold separately ¹³		21,057		
Industrial trucks and tractors, not reported by type		41,572		
		4,210		
Blowers, exhaust and ventilating fans		129,913		
Axial fans:				
Directly connected to driver		3,361		
Belt driven		3,700		
Centrifugal fans and blowers:				
Blower-filter units, sold separately		5,427		
Classes I and II fans (over 1½" to 6¾" maximum total pressure)		8,587		
Classes III and IV fans (greater than 6¾" maximum total pressure)		7,417		
Furnace and light weight air-conditioning blowers		6,337		
Industrial fans		17,821	(16)	(16)
Small-housed blowers (utility sets)		4,274		
Propeller fans:				
Directly connected to driver		17,850		
Belt-driven		8,262		
Penthouses, shutters, guards, and other accessories for propeller fans		1,571		
Parts for fans and blowers		13,108		
Air washers		1,682		
Blowers, exhaust and ventilating fans, not reported by type		4,874		
Dust collection and other air purification equipment		25,642		

n.a.—Not available.

¹ Industrial pumps encompass a broad area, including some pumps for nonindustrial uses. An example is the small pumps used in home heating equipment. To some extent, the size classifications segregate these pumps. In other instances, the differentiation by average value separates these pumps. However, the segregation is not precise.

² The categories of "average value" represent the classification of a company's entire shipment of pumps of a particular type and size group. For example, if Company "X" shipped 400 rotary pumps valued at \$5,000, designed to operate at 100 lbs. per square inch and less and with a designed capacity of less than 10 gals. per minute, and 50 pumps of the same type and size valued at \$1,800, the average value of the 450 pumps is \$15, and all of these 450 pumps would be shown in the classification "Average value under \$20."

³ The 1939 data for quantity of pumps and compressors are not shown since they are understated to the extent that some of the small pumps used for oil burners, heating equipment, machine tool lubrication, etc., are not included.

⁴ The total number and value of 1947 shipments of rotary pumps, all pressures, are shown below. Some of these data cannot be shown by designed pressure without disclosing figures for individual companies.

	Number of pumps	Value f.o.b. plant
Rotary pumps, all pressures, by designed capacity:		
10 gals. per minute and under	1,050,945	\$13,707
11-25 gals. per minute	80,974	3,922
26-100 gals. per minute	75,211	5,787
101-200 gals. per minute	13,437	1,952
201-500 gals. per minute	2,018	835
501-1000 gals. per minute	749	1,031
1001 and over gals. per minute	177	490

⁵ For 1939, excludes the value of parts and attachments for elevators and moving stairways, which were not collected separately.

⁶ Includes sidewalk elevators, dumb-waiters, hand-operated freight elevators, and elevators and moving stairways, not reported by type.

⁷ In 1939, farm elevators and monorail systems were included with conveyors and conveying systems.

⁸ The 1939 figure does not include kilns.

⁹ Excludes electric heating units for furnaces and ovens sold separately.

¹⁰ Includes blast furnace work and miscellaneous small furnaces such as bench type furnaces, etc.

¹¹ Data for plain mounted bearings and industrial high speed drives, fixed ratio, not shown separately in 1939. Data for these products are included in the \$39,660,000 figure for "Other mechanical power-transmission equipment (except variable ratio speed drives)."

¹² Includes machines for wrapping and packaging tobacco.

¹³ Does not include farm elevators.

¹⁴ Includes two-wheel, four-wheel, dollies, and platform trucks.

¹⁵ Includes pallets and skids.

¹⁶ Comparable data not available.

CENSUS OF MANUFACTURES: 1947

TABLE 7.—SELECTED MATERIALS CONSUMED, BY KIND: 1947

[The table below summarizes the consumption of selected metal shapes by manufacturers during 1947. For each shape, manufacturing establishments were required to report consumption, in quantity and cost, provided that such usage during 1947 exceeded the following amounts: for iron castings, steel castings, each of six carbon steel shapes—50 short tons; for alloy steel bars and all other alloy steel—25 short tons; for stainless steel, brass and copper wire mill shapes, copper and brass castings, aluminum mill shapes and aluminum castings—10 short tons]

[Money figures in thousands of dollars]

METAL SHAPE	PUMPS AND COMPRESSORS INDUSTRY			ELEVATORS AND ESCALATORS INDUSTRY			CONVEYORS INDUSTRY		
	Establishments consuming more than specified quantities								
	Number	Short tons	Cost	Number	Short tons	Cost	Number	Short tons	Cost
Iron castings, rough and semifinished	139	132,460	\$33,001	22	9,254	\$1,990	40	33,902	\$7,054
Steel castings, rough and semifinished	29	12,018	5,656	5	1,882	785	28	14,838	4,856
Steel mill shapes and forms	n.a.	125,305	16,237	n.a.	54,804	5,005	n.a.	238,959	21,329
Carbon steel:									
Bars and bar shapes	71	27,237	3,299	19	11,756	1,132	86	50,224	4,868
Sheet and strip	41	30,449	3,125	13	7,234	945	74	55,184	5,329
Structural shapes	28	14,285	1,351	21	24,443	1,835	80	50,080	4,452
Plates	30	17,898	1,652	10	5,985	403	57	50,755	4,006
Wire	5	753	101	(1)	225	69	(1)	1,272	215
All other mill shapes and forms	25	22,437	2,705	(1)	5,090	610	12	8,563	1,005
Alloy steel, except stainless:									
Bars and bar shapes	21	6,245	891	(1)	71	11	12	6,015	751
All other mill shapes and forms	11	3,186	845	(1)			9	4,131	567
Stainless steel	40	2,815	2,268				(1)	135	136
Copper and copper-base alloy:									
Brass and wire mill shapes and forms	52	5,726	4,344	5	921	784	7	151	125
Castings, rough and semifinished	83	10,571	8,303	(1)	113	96	9	775	569
Aluminum:									
Aluminum mill shapes	(1)	56	42	(1)	68	43	(1)	79	76
Castings, rough and semifinished	22	1,016	1,419	(1)	101	165	(1)	126	147

METAL SHAPE	BLOWERS AND FANS INDUSTRY			INDUSTRIAL TRUCKS AND TRACTORS INDUSTRY			POWER-TRANSMISSION EQUIPMENT INDUSTRY		
	Establishments consuming more than specified quantities								
	Number	Short tons	Cost	Number	Short tons	Cost	Number	Short tons	Cost
Iron castings, rough and semifinished	23	11,546	\$2,967	31	20,448	\$3,928	85	65,802	\$12,636
Steel castings, rough and semifinished	6	1,123	511	15	13,944	3,557	28	7,918	2,338
Steel mill shapes and forms	n.a.	87,068	9,648	n.a.	84,318	7,339	n.a.	106,591	14,192
Carbon steel:									
Bars and bar shapes	32	8,921	966	50	25,316	2,452	68	29,922	3,660
Sheet and strip	80	54,612	5,656	37	23,231	1,767	25	42,717	5,160
Structural shapes	15	4,954	424	28	10,857	921	(1)	1,207	96
Plates	21	16,605	1,409	28	18,831	1,360	16	10,987	804
Wire	(1)	239	57	(1)	3,324	435	(1)	554	114
All other mill shapes and forms	(1)	417	161	5	969	161	(1)	119	33
Alloy steel, except stainless:									
Bars and bar shapes	(1)	291	212	9	1,580	219	30	14,470	2,520
All other mill shapes and forms	(1)	720	438	(1)	210	24	6	6,343	1,573
Stainless steel	9	309	305				5	272	232
Copper and copper-base alloy:									
Brass and wire mill shapes and forms	7	1,114	842	(1)	184	192	15	2,209	1,452
Castings, rough and semifinished	(1)	75	79	(1)	86	80	36	7,998	4,450
Aluminum:									
Aluminum mill shapes	20	1,085	662				(1)	50	36
Castings, rough and semifinished	11	531	701	(1)	19	22	9	867	797

METAL SHAPE	INDUSTRIAL FURNACES AND OVENS INDUSTRY			MECHANICAL STOKERS INDUSTRY			GENERAL INDUSTRIAL MACHINERY, N.E.C., INDUSTRY		
	Establishments consuming more than specified quantities								
	Number	Short tons	Cost	Number	Short tons	Cost	Number	Short tons	Cost
Iron castings, rough and semifinished	15	3,339	\$734	14	18,356	\$3,568	85	40,170	\$10,788
Steel castings, rough and semifinished	5	2,221	665	(1)	158	128	18	6,724	2,406
Steel mill shapes and forms	n.a.	41,208	4,826	n.a.	26,332	2,558	n.a.	115,548	16,072
Carbon steel:									
Bars and bar shapes	13	3,972	361	8	4,093	286	54	13,448	1,739
Sheet and strip	19	10,072	1,121	12	8,953	762	33	15,473	1,843
Structural shapes	21	8,193	760	6	1,855	148	20	7,376	800
Plates	19	17,288	1,242	6	2,841	223	47	60,003	5,740
Wire							6	2,542	401
All other mill shapes and forms	(1)			(1)	8,447	1,070	10	12,956	2,500
Alloy steel, except stainless:									
Bars and bar shapes	(1)	520	129	(1)			10	950	204
All other mill shapes and forms	(1)			(1)	153	69	(1)	298	56
Stainless steel	13	1,158	1,213	(1)			26	2,412	2,789
Copper and copper-base alloy:									
Brass and wire mill shapes and forms	8	737	537	(1)	28	24	43	14,148	11,251
Castings, rough and semifinished	(1)	75	66	(1)	132	111	33	1,662	1,531
Aluminum:									
Aluminum mill shapes	(1)	(d)	(d)				6	228	138
Castings, rough and semifinished	(1)	6	6	(1)	(d)	(d)	14	398	577

n.a.—Not available.

^d Withheld to avoid disclosing figures for individual companies.

¹ Less than 5 establishments.

TABLE 8.—NUMBER OF ESTABLISHMENTS PERFORMING SELECTED METALWORKING OPERATIONS: 1947
 (The figures in the table represent the number of establishments maintaining the metalworking operation specified, according to the usual number of production workers employed in the operation during 1947)

METALWORKING OPERATION	PUMPS AND COMPRESSORS INDUSTRY						ELEVATORS AND ESCALATORS INDUSTRY						CONVEYORS INDUSTRY					
	Number of establishments performing selected metalworking operations																	
	Total	Distribution by number of production workers in the operation					Total	Distribution by number of production workers in the operation					Total	Distribution by number of production workers in the operation				
		1-4	5-19	20-49	50-99	100 and over		1-4	5-19	20-49	50-99	100 and over		1-4	5-19	20-49	50-99	100 and over
Foundry	55	4	12	11	15	13	6	1	3		1	1	10	1	3		2	4
Die casting	6	4	2				1	1					1	1				
Forging—presses, hammers, or up-setters	10	6	4				1	1					16	10	4	2		
Electroplating	10	6	3	1			4	3	1				2	2				
Galvanizing and other hot dip coating	7	1	5	1			1	1					1	1				
Heat treating or annealing of metals	42	32	8	2			3	2			1		19	13	5		1	
Automatic screw-machine department	48	25	15	6	1	1	3	1	1	1			18	13	4		1	
Machine shop	314	62	86	70	45	51	80	21	30	18	6	5	175	62	63	22	12	16
Tool and die room	99	44	40	9	5	1	15	6	5	3	1		31	16	11	2	2	
Pattern shop	78	49	22	4	1	2	11	9	2				29	18	7	3	1	
Plate or structural fabrication	53	25	13	11	3	1	49	22	19	4	2	2	153	31	56	30	21	15
Stamping, blanking, forming, or drawing	49	23	14	7	2	3	13	6	2	3	2		62	25	21	11	3	2

METALWORKING OPERATION	BLOWERS AND FANS INDUSTRY						INDUSTRIAL TRUCKS AND TRACTORS INDUSTRY						POWER-TRANSMISSION EQUIPMENT INDUSTRY					
	Number of establishments performing selected metalworking operations																	
	Total	Distribution by number of production workers in the operation					Total	Distribution by number of production workers in the operation					Total	Distribution by number of production workers in the operation				
		1-4	5-19	20-49	50-99	100 and over		1-4	5-19	20-49	50-99	100 and over		1-4	5-19	20-49	50-99	100 and over
Foundry	8	3	1	2	1	1	12	3	4	4	1		21	1	3	7	3	7
Die casting	4	4					2	2					6	5	1			
Forging—presses, hammers, or up-setters	3	1	2				10	5	4	1			1	1				
Electroplating	3	2	1				3	3					8	7		1		
Galvanizing and other hot dip coating	2	1	1										1	1				
Heat treating or annealing of metals	5	4	1				17	14	2	1			47	32	11	2	2	
Automatic screw-machine department	4	2	2				7	5	1	1			58	27	21	7	3	
Machine shop	92	45	31	7	4	5	90	36	28	11	8	7	228	26	64	66	38	34
Tool and die room	19	8	9	1	1		24	13	6	4	1		56	22	10	8	6	1
Pattern shop	11	6	5				13	12		1			35	23	9	3		
Plate or structural fabrication	50	11	18	11	6	4	85	27	36	13	9		12	4	4	2		2
Stamping, blanking, forming, or drawing	62	22	23	11	6		51	31	14	5		1	27	9	5	2	6	5

METALWORKING OPERATION	INDUSTRIAL FURNACES AND OVENS INDUSTRY						MECHANICAL STOKERS INDUSTRY						GENERAL INDUSTRIAL MACHINERY, N.E.C., INDUSTRY					
	Number of establishments performing selected metalworking operations																	
	Total	Distribution by number of production workers in the operation					Total	Distribution by number of production workers in the operation					Total	Distribution by number of production workers in the operation				
		1-4	5-19	20-49	50-99	100 and over		1-4	5-19	20-49	50-99	100 and over		1-4	5-19	20-49	50-99	100 and over
Foundry	1		1				8	2		2	3	1	16	2	3	6	2	3
Die casting													3	3				
Forging—presses, hammers, or up-setters	2	1	1				2	1	1				11	7	1	2		1
Electroplating	1		1										7	6	1			
Galvanizing and other hot dip coating													6	6				
Heat treating or annealing of metals	4	1	3				7	7					34	28	6			
Automatic screw-machine department	4	2	1	1			4	3	1				28	15	9	3	1	
Machine shop	57	24	20	9	3	1	28	10	8	6	3	1	256	48	95	66	26	31
Tool and die room	4	3		1			8	4	3	1			46	22	15	8	1	
Pattern shop	4	2	1	1			8	5	2		1		39	27	8	2	1	1
Plate or structural fabrication	60	23	19	11	3	4	10	6	2	2			86	23	33	7	11	9
Stamping, blanking, forming, or drawing	28	14	8	2	4		9	3	4		2		49	25	15	7	1	1

NOTE: In the Pumps and Compressors industry, 75 small establishments did not report any detailed statistics including this inquiry. In the Conveyors industry, 35 small establishments did not report any detailed statistics including this inquiry. In the Power-Transmission Equipment industry, 88 small establishments did not report any detailed statistics including this inquiry. In the General Industry Machinery industry, 99 small establishments did not report any detailed statistics including this inquiry.

In addition, in the above industries as well as in the other industries in this release, a small number of establishments reporting detailed statistics (less than 10 percent of the total), did not answer the inquiry on metalworking operations. Most of these establishments had a small number of employees.

OFFICE AND STORE MACHINES

This report shows the 1947 Census of Manufactures statistics for establishments engaged primarily in the production of office and store machines, such as computing machines, cash registers, typewriters, coin-operated machines, scales and balances, etc. These establishments have been classified in four industries described separately below. Some of the products for which data are included in this report, such as punched card system machines, postage meters, etc., are manufactured primarily for rental purposes rather than for sale. Establishments producing these commodities reported the estimated value of the machines of this type produced during the year. This estimate approximated the value of the products if sold outright and was based on the valuation used for taxes, insurance, or similar purposes. Some of the establishments classified in these industries sold their commodities through their own distribution outlets. The value of shipments reported by these establishments was the factory value, f.o.b. plant, and not the delivery prices to customers. In some instances where exact records were not available, these f.o.b. factory values were estimated by the producers.

Computing and Related Machines (*Full Standard Industrial Classification title and number: Computing Machines and Cash Registers, 3571.*)—This industry comprises establishments primarily engaged in manufacturing adding, calculating, tabulating, and bookkeeping machines; card-punching, sorting, and tabulating machines; and cash registers. Establishments primarily engaged in manufacturing typewriters are classified in Industry 3572, and office duplicating machines and devices in Industry 3579.

In previous censuses, computing machines and cash registers were not shown as a separate industry. Reports for 1939 have been retabulated on a comparative basis. Data for earlier years, however, are not available.

Data for value of products and value added by manufacture are not comparable for the years 1939 and 1947. These values for 1939 are somewhat overstated relative to 1947 because a substantial portion of the industry reported production in terms of delivery prices to customers rather than in terms of their factory value as was done in 1947.

Typewriters (*Standard Industrial Classification No. 3572.*)—This industry comprises establishments primarily engaged in manufacturing typewriters and parts. This industry includes the electric and nonelectric standard typewriters, as well as specialized typewriters and typewriter principle machines, such as continuous form-handling machines, billing machines without accounting registers, office composing machines and stencil-cutting typewriters. Although separate data were collected for electric typewriters, these data could not be shown separately without disclosing the operations of individual companies.

In previous censuses, typewriters were not shown as a separate industry. Reports for 1939 have been retabulated on a comparative basis.

Scales and Balances (*Standard Industrial Classification No. 3576.*)—This industry comprises establishments primarily engaged in manufacturing weighing devices of all types, including those with automatic computing mechanisms and coin-operated scales. Included in this industry are industrial scales, retail and commercial scales, household and person-weighing scales, mailing and parcel post scales, and railroad track and motor truck scales, as well as laboratory precision balances.

For scales and balances (except laboratory), the 1947 census reporting form requested only the total value of shipments. The detailed statistics for the individual types of scales and balances, as shown in table 6, were obtained from a quarterly survey on shipments of scales and balances (except laboratory) conducted by the Bureau of the Census during 1947. Revisions in the data originally submitted on the quarterly survey reports were received from some establishments in the Census of Manufactures. For certain additional establishments whose reporting was incomplete on the current survey, the detail by type of scale was obtained as a part of the 1947 census canvass.

Office and Store Machines and Devices, Not Elsewhere Classified (*This industry includes Standard Industrial Classification Industries 3575 and 3579.*)—This industry comprises establishments primarily engaged in manufacturing store and office machines and devices, not elsewhere classified, such as mimeograph and other duplicating devices; addressing and mailing machines; check-writing, signing, and canceling machines; perforators and other protective devices; automatic merchandising machines; and amusement and other coin-operated machines. Also included in this industry are dictating machines, time-recording and time-stamping machines, and autographic registers. Establishments primarily engaged in manufacturing computing machines and cash registers are classified in Industry 3571; typewriters in Industry 3572; photocopy equipment in Industry 3861; coin-operated refrigerated beverage and ice cream dispensers in Industry 3585; coin-operated phonographs in Industry 3661; coin-operated scales and balances in Industry 3576; and coin-operated photographic apparatus in Industry 3861.

According to the Standard Industrial Classification, automatic merchandising machines, and amusement and other coin-operated machines constitute a separate industry. However, the 1947 census includes establishments primarily producing these products in Industry 3579. This change was made partly because automatic merchandising machines are produced by a group of manufacturers distinct from those that produce amusement and other coin-operated machines. In addition, the data for a coin-operated machines industry would have very limited significance as a result of the classification of coin-operated refrigerated beverage and ice cream dispensers in the Refrigeration Machinery Industry by the Standard Industrial Classification.

In 1939, the Office and Store Machines, Not Elsewhere Classified, Industry included computing machines, cash registers, and typewriters which are now classified in separate industries. Time-stamping and time-recording machines classified in the Clocks and Watches Industry in 1939, and dictating machines classified in the Radio Industry in 1939 are now included in Office and Store Machines, Not Elsewhere Classified, together with automatic merchandising, amusement, and other coin-operated machines which were a separate industry in 1939.

The reports for 1939 have been retabulated on a comparative basis with 1947; data for earlier years, however, are not available. Data for value of product and value added for this industry are not strictly comparable for the years 1939 and

1947. These values for 1939 are somewhat overstated relative to 1947 because a portion of the industry reported production in terms of delivery prices to customers rather than in terms of factory value as was done in 1947.

TABLE 1.—GENERAL STATISTICS FOR THE UNITED STATES: 1947 AND EARLIER CENSUS YEARS

[Money figures in thousands of dollars. For explanation of column captions see GENERAL EXPLANATIONS]

INDUSTRY AND CENSUS YEAR	Number of establishments	All employees		Production and related workers		Value added by manufacture ¹	Cost of materials, fuel, electricity, and contract work ²	Value of products shipped ³
		Number (average for the year) ⁴	Salaries and wages, total	Number (average for the year) ⁵	Wages, total			
Computing and related machines:								
1947	53	46,375	\$154,716	40,467	\$129,361	\$231,207	\$62,262	\$293,469
1939 ⁶	38	n.a.	n.a.	16,517	25,798	71,929	10,400	82,329
Typewriters:								
1947	28	20,604	73,377	23,838	63,709	121,385	32,539	153,924
1939 ⁶	18	n.a.	n.a.	16,195	19,214	29,096	10,830	39,926
1937	21	22,930	28,448	21,440	25,956	31,614	12,392	45,006
1935	20	16,920	18,796	15,398	16,632	25,228	8,630	33,858
1933	14	10,361	8,549	9,591	7,565	13,209	3,256	16,465
1931	20	n.a.	n.a.	10,924	10,328	18,272	3,785	22,057
1929 ⁶	26	18,409	25,656	16,945	22,319	54,609	7,249	61,858
1927 ⁷	26	17,222	22,337	15,603	19,398	45,383	9,936	55,319
Scales and balances:								
1947	75	6,526	18,849	4,874	12,847	34,766	19,776	54,542
1939	56	3,757	5,566	2,839	3,306	9,383	4,987	14,350
1937	57	4,139	5,797	3,269	4,115	11,998	5,858	17,856
1935	56	3,271	4,195	2,468	2,633	5,567	3,816	13,383
1933	45	2,896	2,883	2,187	1,825	6,171	2,162	8,333
1931	54	n.a.	n.a.	2,814	3,233	10,917	3,644	14,561
1929	59	6,183	8,845	4,118	5,995	22,943	7,438	30,381
1927	60	4,988	7,891	3,906	5,461	17,201	7,454	24,655
1925	71	5,397	8,242	4,292	5,783	19,888	7,349	27,237
1923	65	6,289	7,794	4,245	5,500	17,563	6,594	24,157
1921	65	4,804	6,290	3,720	4,428	11,169	4,716	15,885
1919	79	6,783	8,800	5,432	6,534	13,647	6,904	20,551
1914	83	5,443	4,168	4,467	2,934	6,560	3,174	9,734
1909	87	4,231	3,001	3,559	2,185	6,082	2,704	8,786
1904	85	3,584	2,231	3,133	1,755	4,370	1,633	6,003
1899	86	3,080	1,734	2,775	1,437	3,707	1,533	5,240
Office and store machines, n. e. c.:								
1947	201	18,273	56,181	15,161	41,541	116,496	59,304	175,800
1939 ⁶	139	n.a.	n.a.	7,438	10,034	35,655	17,751	53,406

n.a.—Not available.

¹ Value of products less cost of materials, supplies, fuel, electricity, and contract work. See GENERAL EXPLANATIONS—Value added by manufacture.² Figures for years prior to 1935 do not include cost of contract work.³ For 1947 and 1929, value of products shipped; for all other years, value of products made. See GENERAL EXPLANATIONS—Value of products shipped.⁴ The returns for 1939 have been retabulated to provide figures comparable with those for 1947. For "Computing and related machines" and "Office and store machines, n. e. c.," the data for value added and value of products shipped are not comparable between 1939 and 1947. (See text for further explanation.) No comparable figures for "Computing and related machines" and "Office and store machines, n. e. c.," are available for earlier years.⁵ In 1939, "Typewriters" was not classified as a separate industry but was included in "Office and store machines, n. e. c." The figures for 1939 were obtained from a retabulation of the returns for this industry. Prior to 1939, "Typewriters" constituted a separate classification.⁶ The figures for 1927 and 1929 include data for certain establishments producing typewriter-bookkeeping-billing machines, while those for later years do not include data for these establishments.⁷ Prior to 1927, "Typewriters" included data for carbon paper and inked ribbons. Therefore, comparable data are not available for earlier years.

CENSUS OF MANUFACTURES: 1947

TABLE 2.—GENERAL STATISTICS BY DIVISIONS AND STATES: 1947

[Money figures and man-hours in thousands. For explanation of column captions see GENERAL EXPLANATIONS]

INDUSTRY, DIVISION, AND STATE	Number of establishments	All employees		Production and related workers			Value added by manufacture	Cost of materials, fuel, electricity, and contract work	Value of products shipped	Expenditures for new plant and equipment
		Number (average for the year)	Salaries and wages, total	Number (average for the year)	Man-hours, total	Wages, total				
Computing and related machines, total ¹	53	46,375	\$154,716	40,467	85,445	\$129,361	\$231,207	\$62,262	\$293,469	\$22,295
Northeast	24	17,967	59,516	15,060	31,431	47,265	73,450	32,441	105,891	7,287
New York	12	12,634	42,306	10,856	21,946	34,670	45,903	23,938	69,841	3,806
North Central	20	24,773	84,520	22,616	48,348	74,569	139,486	25,583	165,068	12,866
South and West	9	3,635	10,680	2,791	5,666	7,537	18,272	4,238	22,510	2,142
California	6	3,609	10,625	2,760	5,623	7,495	18,187	4,196	22,383	2,131
Typewriters, total ¹	28	26,604	73,377	23,838	49,684	63,709	121,385	32,539	153,924	8,862
New England	6	12,859	34,264	11,931	26,060	31,253	54,390	13,059	67,449	2,082
Middle Atlantic	11	12,943	36,957	11,281	22,292	30,805	63,598	18,490	82,094	6,694
New York	11	12,943	36,957	11,281	22,292	30,805	63,598	18,490	82,094	6,694
Other divisions	11	802	2,156	626	1,332	1,651	3,397	984	4,381	96
Scales and balances, total ¹	75	6,526	18,849	4,874	10,041	12,847	34,766	19,776	54,542	1,457
Northeast	27	2,889	7,579	2,413	5,256	6,092	14,627	6,122	20,740	591
New York	9	703	1,773	600	1,267	1,420	3,517	1,799	5,316	14
Pennsylvania	4	141	315	122	253	253	476	270	755	20
North Central	27	3,346	10,407	2,213	4,280	6,102	18,663	12,373	31,036	828
Illinois	13	1,114	3,028	961	1,855	2,327	5,777	5,174	10,951	249
South	10	145	459	118	236	333	732	848	1,580	13
West	11	146	404	130	269	320	744	433	1,177	25
Office and store machines, n. e. c., total ¹	201	18,273	56,181	15,161	30,406	41,541	116,496	59,304	175,800	4,490
Northeast and North Central	181	18,029	55,480	14,984	30,063	41,068	115,147	58,480	173,627	4,395
Connecticut	11	3,003	9,143	2,377	4,368	6,561	17,975	7,220	25,204	938
New York	44	2,142	6,857	1,833	3,844	5,016	10,367	5,584	21,951	187
New Jersey	13	1,700	4,912	1,422	2,754	3,589	8,527	2,807	11,334	323
Illinois	57	6,843	20,075	5,964	11,766	15,376	40,162	32,040	72,202	1,264
Michigan	6	124	278	93	190	199	392	206	598	39
South and West	20	244	701	177	343	443	1,349	824	2,173	95
California	15	196	565	139	260	350	1,070	744	1,814	91

¹ For each producing State not shown separately in the table (see GENERAL EXPLANATIONS "Disclosure of Data for Individual Companies"), there are shown below the number of establishments and, in parentheses, the number of employees for States represented by three or more companies, when possible.

Computing and related machines: *Northeast*, Maine, 1; Massachusetts, 3 (131); Rhode Island, 1; Connecticut, 3 (3,801); New Jersey, 2; Pennsylvania, 2; *North Central*, Ohio, 4 (13,957); Indiana, 1; Illinois, 8 (2,372); Michigan, 5 (7,966); Wisconsin, 1; Missouri, 1; *South and West*, North Carolina, 1; Texas, 1; Washington, 1.

Typewriters: *New England*, Massachusetts, 2; Connecticut, 4; *Other divisions*, Ohio, 2; Indiana, 1; Illinois, 4 (738); Michigan, 1; Washington, 1; California, 2.

Scales and balances: *Northeast*, Vermont, 2; Massachusetts, 1; Connecticut, 3 (14); New Jersey, 8 (564); *North Central*, Ohio, 7 (2,146); Indiana, 3 (54); Michigan, 1; Minnesota, 2; Missouri, 1; *South*, District of Columbia, 1; Georgia, 2; Kentucky, 3 (82); Tennessee, 1; Alabama, 1; Oklahoma, 2; *West*, Colorado, 2; Utah, 1; California, 8 (39).

Office and store machines, n. e. c.: *Northeast and North Central*, Massachusetts, 10 (654); Pennsylvania, 7 (230); Ohio, 16 (3,033); Indiana, 3 (62); Wisconsin, 4 (110); Minnesota, 2; Iowa, 3; Missouri, 5 (84); *South and West*, Maryland, 1; Virginia, 1; Florida, 2; Texas, 1.

TABLE 3.—DETAILED STATISTICS FOR THE UNITED STATES: 1947

[Money figures in thousands of dollars. For explanation of line captions see GENERAL EXPLANATIONS]

ITEM	Industry				ITEM	Industry			
	Com- puting and related machines	Type- writers	Scales and bal- ances	Office and store ma- chines, n. e. c.		Com- puting and related machines	Type- writers	Scales and bal- ances	Office and store ma- chines, n. e. c.
Number of establishments.....	53	28	75	201	Value of inventories:				
All employees:					Beginning of year, total.....	\$74,699	\$25,177	\$7,376	\$33,380
Number (average for the year).....	46,375	26,604	6,626	18,273	Finished products.....	10,673	3,401	908	11,062
Salaries and wages, total.....	\$154,716	\$73,377	\$18,849	\$56,181	Materials, supplies, and work in process.....	64,026	21,776	6,468	22,318
Production and related workers:					End of year, total.....	104,352	30,909	9,393	40,690
Number (average for the year).....	40,467	23,838	4,874	15,161	Finished products.....	17,770	4,727	1,578	15,320
Man-hours, total..... thousands.....	85,445	49,684	10,041	30,406	Materials, supplies, and work in process.....	86,582	26,182	7,815	25,270
Wages, total.....	\$120,361	\$63,709	\$12,847	\$41,541	Expenditures for plant and equipment:				
Value added by manufacture.....	\$231,207	\$121,385	\$34,766	\$116,496	New plant and equipment.....	\$22,295	\$8,862	\$1,457	\$4,490
Number of employees for pay period ended nearest Oct. 15:					Construction and major alteration of fixed plants.....	5,079	3,473	423	1,429
All employees.....	49,122	28,275	6,685	18,124	Buildings.....	4,959	3,457	400	1,386
Male.....	36,649	18,119	5,693	13,316	Other construction.....	120	16	23	43
Female.....	12,473	10,156	1,092	4,808	Machinery and equipment.....	17,216	5,389	1,034	3,061
Production and related workers.....	42,668	25,406	5,017	15,025	Production machinery and equip- ment.....	14,464	4,069	904	2,524
Male.....	32,550	18,554	4,404	11,445	Other machinery and equipment.....	2,752	1,320	130	537
Female.....	10,118	6,852	613	3,580	Used plant and equipment, and land.....	1,198	2,494	107	1,494
Force-account construction workers.....					Number of highway-type motor vehicles owned or leased:				
Administrative, supervisory, sales, and all other.....	6,454	2,809	1,668	3,099	Trucks.....	87	25	60	67
Male.....	4,099	1,565	1,189	1,871	By manufacturer's rated capacity:				
Female.....	2,355	1,244	479	1,228	Under 1 1/2 tons.....	32	8	40	36
All employees, number by month:					1 1/2 tons.....	19	8	13	14
January.....	43,432	26,531	6,085	18,792	Over 1 1/2 tons and less than 3 1/2 tons.....	31	3	6	9
February.....	44,576	27,049	6,193	18,857	3 1/2 tons and less than 5 tons.....	1	2	1	6
March.....	45,755	27,872	6,289	18,776	5 tons and over.....	4	4	1	2
April.....	46,460	27,258	6,360	19,039	By body type:				
May.....	46,962	27,712	6,451	18,959	Van.....	10	3	3	7
June.....	43,765	22,026	6,571	18,637	Stake or platform.....	26	12	11	19
July.....	40,193	19,844	6,615	17,976	Panel or light delivery.....	22	8	40	35
August.....	47,049	27,315	6,651	17,482	All other trucks.....	29	2	6	6
September.....	48,102	27,877	6,696	17,425	Truck tractors.....				
October.....	49,122	28,275	6,685	18,124	Trailers and semitrailers.....				
November.....	50,014	28,783	6,795	17,586					
December.....	51,037	29,187	6,877	17,545					
Cost of materials, fuel, electricity, and con- tract work.....	\$82,262	\$32,539	\$19,776	\$59,304					
Materials, parts, containers, and supplies.....	54,698	30,616	18,741	57,212					
Fuels, total.....	2,207	548	316	324					
Bituminous coal.....	739	418	133	159					
Anthracite.....	4		5	17					
Coke.....	40		78						
Fuel oils.....	115	32	41	105					
Gas.....	1,399	89	48	40					
Other fuels.....		9	11	3					
Purchased electric energy.....	617	671	222	585					
Contract and commission work.....	4,650	704	497	1,183					

TABLE 4.—SELECTED GENERAL STATISTICS BY SIZE OF ESTABLISHMENT, FOR THE UNITED STATES: 1947

[Money figures in thousands of dollars. For explanation of line captions see GENERAL EXPLANATIONS. Data which cannot be shown without disclosing information for individual companies have been combined with figures for other groups. A ^d appears in the column where the figure has been omitted and the combined figure is printed in italics]

ITEM	Total, all estab- lish- ments	Establishments with an average of—									
		1-4 em- ployees	5-9 em- ployees	10-19 em- ployees	20-49 em- ployees	50-99 em- ployees	100-249 em- ployees	250-499 em- ployees	500-999 em- ployees	1,000- 2,499 employees	2,500 employees and over
Computing and related machines:											
Number of establishments.....	53	14	3	7	3	2	5	2	6	7	4
Number of employees (average for the year).....	46,375	34	20	109	(^d)	303	1,580	(^d)	4,459	11,218	28,652
Value added by manufacture.....	\$231,207	\$263	\$98	\$560	(^d)	\$1,069	\$7,704	(^d)	\$25,059	\$53,471	\$142,983
Typewriters:											
Number of establishments.....	28	(^d)	4	3	1	3	5	1	1	5	3
Number of employees (average for the year).....	26,604	(^d)	29	72	(^d)	210	1,410	(^d)	(^d)	8,935	15,948
Value added by manufacture.....	\$121,385	(^d)	\$160	\$238	(^d)	\$772	\$8,740	(^d)	(^d)	\$33,261	\$73,224
Scales and balances:											
Number of establishments.....	75	22	14	7	8	9	10	2	2	1	
Number of employees (average for the year).....	6,526	58	97	104	291	638	2,128	(^d)	(^d)	5,210	
Value added by manufacture.....	\$34,766	\$296	\$404	\$541	\$1,604	\$2,672	\$13,581	(^d)	(^d)	\$15,688	
Office and store machines, n. e. c.:											
Number of establishments.....	201	48	24	35	33	19	23	13	4	1	1
Number of employees (average for the year).....	18,273	103	154	466	1,059	1,305	3,931	4,363	6,892	(^d)	(^d)
Value added by manufacture.....	\$116,496	\$461	\$603	\$2,308	\$6,230	\$5,872	\$21,374	\$28,560	\$51,088	(^d)	(^d)

CENSUS OF MANUFACTURES: 1947

TABLE 5.—VALUE OF PRODUCTS SHIPPED, BY BROAD CLASSES OF PRODUCTS, FOR THE UNITED STATES: 1947

[The first column shows the total value of shipments of the specified industry, divided among: (A) products classified in (primary to) the industry, (B) products classified in other industries (secondary to the specified industry), and (C) miscellaneous receipts. The second column shows the value of shipments of the primary products of the specified industry reported by establishments in other industries. The third column shows the total value of shipments of the primary products of the specified industry by all reporting manufacturers]

[Money figures in thousands of dollars]

COMPUTING AND RELATED MACHINES INDUSTRY	Shipped by—		
	Computing and related machines industry	Other industries	All industries
Total shipments by the industry	\$293,469		
A. Computing machines and cash registers	280,022	\$21,787	\$301,809
B. Secondary products	10,207		
C. Miscellaneous receipts	3,240		
Repair work	1,888		
Other receipts	1,352		

SCALES AND BALANCES INDUSTRY	Shipped by—		
	Scales and balances industry	Other industries	All industries
Total shipments by the industry	\$54,542		
A. Scales and balances	47,454	\$4,035	\$51,489
B. Secondary products	4,709		
C. Miscellaneous receipts	2,379		
Repair work	1,996		
Other receipts	383		

TYPEWRITERS INDUSTRY	Shipped by—		
	Type- writers industry	Other industries	All industries
Total shipments by the industry	\$153,924		
A. Typewriters	140,163	(¹)	\$140,163
B. Secondary products	10,035		
C. Miscellaneous receipts	(¹)		

OFFICE AND STORE MACHINES, N. E. C., INDUSTRY	Shipped by—		
	Office and store machines, n. e. c., industry	Other industries	All industries
Total shipments by the industry	\$175,800		
A. Primary products of the industry	161,072	\$7,818	\$178,890
Automatic merchandising machines (except coin-operated photographic apparatus, scales, and refrigerated beverage and ice cream dispensers)	(^d)	(^d)	14,535
Amusement and other coin-operated machines (except coin-operated phonographs)	(^d)	(^d)	47,882
Office and store machines, not elsewhere classified	105,873	10,000	116,473
B. Secondary products	11,146		
C. Miscellaneous receipts	3,582		
Repair work	1,312		
Other receipts	2,270		

^d Withheld to avoid disclosing figures for individual companies.

¹ A very small amount of typewriters (less than 3 percent of the total) was made by establishments classified outside the typewriters industry. Likewise, the "miscellaneous receipts" of establishments in the typewriters industry constituted a negligible portion of the total value of the typewriters industry. The exact data are withheld to avoid disclosing figures for individual companies.

OFFICE AND STORE MACHINES

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TABLE 6.—QUANTITY AND VALUE OF PRODUCTS, TOTALS FOR THE UNITED STATES: 1947 AND 1939

[Money figures in thousands of dollars]

PRODUCT	1947		1939	
	Total shipments and interplant transfers		Total production for sale and interplant transfer	
	Quantity (number of units)	Value f.o.b. plant	Quantity (number of units)	Value f.o.b. plant
Computing machines and cash registers, total ¹		\$301,809		n.a.
Accounting and bookkeeping machines (including billing machines with accounting registers) . . .	40,539	50,213	² 13,076	² \$10,536
Adding machines . . .	342,561	47,240	131,726	9,808
Adding machines—electric . . .	161,040	28,817	n.a.	n.a.
Adding machines—nonelectric . . .	181,521	18,423	n.a.	n.a.
Calculating machines . . .	122,879	37,634	31,578	8,608
Calculating machines—electric . . .	97,798	32,172	n.a.	n.a.
Calculating machines—nonelectric . . .	25,081	5,462	n.a.	n.a.
Coin and currency handling machines . . .		6,009		(³)
Cash registers and other computing machines ⁴ . . .		139,556		² 36,079
Parts and attachments, sold separately . . .		21,157		(³)
Typewriters, total . . .		140,163		39,644
Standard typewriters, except portable (including noiseless and electric) . . .	865,955	93,716	484,440	23,032
Portable typewriters . . .	626,731	30,655	432,850	9,407
Specialized typewriters and typewriter principle machines ⁷ . . .		2,993	(⁸)	(⁹)
Parts and attachments for typewriters, sold separately . . .		12,525		5,363
Rebuilt typewriters ⁸ . . .		274		1,842
Automatic merchandising machines (except coin-operated photographic apparatus, scales, refrigerated beverage and ice cream dispensers), total . . .		14,535		6,154
Food and confection bulk machines . . .	197,489	3,153		
Packaged food and confection machines . . .	28,940	2,909	n.a.	n.a.
Cigarette machines . . .	32,595	5,502		
Other automatic merchandising machines ⁹ . . .		2,971		
Amusement and other coin-operated machines (except coin-operated phonographs), total . . .		47,882		12,338
Pin ball machines . . .	138,147	30,506		
Bell type machines and consoles . . .	49,271	11,192	n.a.	n.a.
Other coin-operated amusement machines ¹⁰ . . .		6,124		
Scales and balances, total . . .		51,489		13,953
Scales and balances (except laboratory) and accessories and attachments ¹¹ . . .		47,158		13,116
Industrial scales (including railroad track and motor truck) . . .		21,886		
Bench and portable . . .		5,115		
Floor and dormant . . .		2,783		
Other industrial scales ¹² . . .		13,988		
Retail and commercial scales . . .		12,963		
Computing . . .	95,497	11,153		
Other retail and commercial scales (including hanging scales for retail use) . . .		1,810	n.a.	n.a.
Household and person-weighing scales . . .		8,805		
Bathroom . . .	1,429,003	5,113		
Baby scales . . .	354,790	1,109		
Miscellaneous, including person-weighing scales . . .		2,583		
Mailing and parcel post scales . . .		931		
Scales and balances, not reported by type . . .		1,695		
Accessories and attachments, sold separately . . .		878		(¹³)
Laboratory precision balances (including accessories and attachments, sold separately) . . .		2,044		¹⁴ 429
Parts for scales and balances, sold separately (for repair, service, etc.) . . .		2,287		¹⁵ 408
Office and store machines and devices, not elsewhere classified, total ¹		116,473		49,462
Check handling machines (including canceling, cutting, dating, endorsing, numbering, protecting, signing, sorting, and writing machines) . . .		4,171		¹⁶ 2,094
Dictating machines (including dictating, transcribing, shaving, conference recording, and combination dictating and telephone recording machines) . . .		20,322		6,044
Duplicating machines . . .		14,610		5,307
Stencil . . .		3,523		
Other (including spirit, gelatin, offset, ribbon and ink, and reproducing typewriters) . . .		11,087	n.a.	n.a.
Time-recording and time stamp machines (including watchmen's clocks) . . .		13,992		2,959
Autographic registers . . .		2,084		644
Other office and store machines and devices . . .		16,367		¹⁷ 11,176
Parts and attachments for office and store machines and devices, sold separately . . .		8,663		¹⁸ 9,809
Rebuilt office and store machines and devices, n. e. c. . .		(¹⁹)		¹⁹ 5,675
Supplies for addressing and mailing and duplicating machines . . .		16,359		6,754

n.a.—Not available.

¹ The 1939 and 1947 values are not strictly comparable. The 1947 value represents factory values; the 1939 value, in some cases, is the delivery price to customers.² Includes a small number of typewriter-bookkeeping-billing machines without accounting registers, which in 1947 are classified in "Typewriters."³ The 1939 data for "Cash registers and other computing machines" include also coin and currency handling machines. The \$36,079,000 also includes a small quantity of fare boxes and fare registers, which in 1947 are included in Industry 3821, "Mechanical measuring and controlling instruments." However, the value does not include postage meters and postal permit mailing machines which are included in the 1939 comparison figure for "Other office and store machines and devices."⁴ Although separate data were collected for cash registers and punched card system machines, these could not be shown without disclosing figures for individual companies. This item also includes postage meters and postal permit mailing machines, ticket counting machines, vest pocket and other simple adding or calculating devices, and rebuilt computing machines and cash registers.⁵ The 1939 data for "Parts and attachments sold separately" are included in the 1939 comparison figure for "Other office and store machines and devices."⁶ In 1939, specialized typewriters and typewriter principle machines were not collected separately. The major portion of these machines was reported with standard typewriters. The remainder is included in the comparable 1939 figure for "Accounting and bookkeeping machines."⁷ Includes continuous form-handling machines, typewriter-billing machines without accounting registers, office composing machines, and stencil-cutting typewriters.⁸ Data on rebuilt typewriters do not include those rebuilt by nonmanufacturing establishments such as repair shops, etc.⁹ Includes cigar, postage stamp, sanitary napkin, service machines, etc., and automatic merchandising machines not reported by type.¹⁰ Includes strength testing, skill games, other arcade pieces, etc., as well as a small amount of coin-operated amusement machines not reported by type.¹¹ The detailed data by types of scales and balances (except laboratory) represent revisions of data originally published in the Facts for Industry Series M39C—Scales and Balances. See text for explanations.¹² Includes built-in scales, predetermined-weight scales, special purpose industrial scales, railroad track and motor truck scales, and miscellaneous industrial scales.¹³ In 1939, data for accessories and attachments for scales and balances were not called for separately but were included with parts for scales and balances.¹⁴ Includes parts and attachments for computing machines, cash registers, and other machines with computing mechanisms, which in 1947 are included under "Computing machines and cash registers."¹⁵ In 1939, check numbering machines were included with "Other office and store machines and devices," which figure also includes postage meters and postal permit mailing machines. In 1947, postage meters and postal machines are included in "Cash registers and other computing machines."¹⁶ In 1947, rebuilt office and store machines and devices, n. e. c., were combined with "Other office and store machines and devices" to avoid disclosing figures for individual companies.¹⁷ Includes rebuilt computing machines, cash registers, and other machines with computing mechanisms, which in 1947 are included with "Computing machines and cash registers."

CENSUS OF MANUFACTURES: 1947

TABLE 7.—SELECTED MATERIALS CONSUMED, BY KIND: 1947

[The table below summarizes the consumption of selected metal shapes by manufacturers during 1947. For each shape, manufacturing establishments were required to report consumption, in quantity and cost, provided that such usage during 1947 exceeded the following amounts: For iron castings, steel castings, each of six carbon steel shapes—50 short tons; for alloy steel bars and all other alloy steel—25 short tons; for stainless steel, brass and copper wire mill shapes, copper and brass castings, aluminum mill shapes and aluminum castings—10 short tons]

[Money figures in thousands of dollars]

METAL SHAPE	Establishments consuming more than specified quantities											
	Computing and related machines industry			Typewriters industry			Scales and balances industry			Office and store machines, n. e. c., industry		
	Number	Consumption		Number	Consumption		Number	Consumption		Number	Consumption	
		Short tons	Cost		Short tons	Cost		Short tons	Cost		Short tons	Cost
Iron castings, rough and semifinished.....	6	2,302	\$777	11	4,672	\$1,519	17	6,633	\$2,112	7	3,002	\$1,200
Steel castings, rough and semifinished.....							(1)	250	98	(1)	(d)	(d)
Steel mill shapes and forms.....	n.a.	48,998	7,213	n.a.	31,335	4,697	n.a.	15,247	2,789	n.a.	23,246	4,289
Carbon steel:												
Bars and bar shapes.....	14	13,100	1,820	11	5,952	902	10	2,361	308	7	2,448	415
Sheet and strip.....	21	32,068	4,480	12	19,223	2,731	14	10,788	2,123	35	18,418	3,048
Structural shapes.....				(1)	(2)	(2)	6	1,604	147	(1)	(3)	(3)
Plates.....	(1)	(2)	(2)				(1)	345	38	5	2,113	753
Wire.....	(1)	111	53	(1)	176	233						
All other mill shapes and forms.....	(1)	21,948	2,315	(1)	2,475	2,646						
Alloy steel, except stainless:							(1)	86	25	(1)	221	27
Bars and bar shapes.....	(1)	536	135							(1)	46	46
All other mill shapes and forms.....	(1)	1,091	303	(1)	447	134	(1)	73	58			
Stainless steel.....	7	144	107	(1)	62	51						
Copper and copper-base alloy:												
Brass and wire mill shapes and forms.....	10	1,650	1,487	(1)	381	199	8	209	135	11	764	793
Castings, rough and semifinished.....	(1)	46	38				(1)	70	52	(1)	(d)	(d)
Aluminum:												
Aluminum mill shapes.....	12	363	233	(1)	52	49	(1)	196	118	9	432	271
Castings, rough and semifinished.....	7	527	884	9	2,427	2,190	5	373	381	11	293	527

n.a.—Not available.

^d Withheld to avoid disclosing figures for individual companies.

¹ Less than 5 establishments.

² Data combined with "All other carbon steel mill shapes and forms" in order to avoid disclosing figures for individual companies.

³ Data combined with "All other alloy steel mill shapes and forms" in order to avoid disclosing figures for individual companies.

SERVICE-INDUSTRY AND HOUSEHOLD MACHINES

This report shows the 1947 Census of Manufactures statistics for establishments engaged primarily in the production of domestic laundry equipment; commercial laundry, dry-cleaning, and pressing machines; sewing machines; vacuum cleaners; refrigerators, refrigeration machinery, and complete air-conditioning units; measuring and dispensing pumps; and other service-industry and household machines, such as dishwashing machines, water softeners, floor waxers and polishers, and carpet sweepers. These establishments have been classified in seven industries described separately below.

Domestic Laundry Equipment (*Standard Industrial Classification No. 3581.*)—This industry comprises establishments primarily engaged in manufacturing laundry equipment such as washing machines, wringers, driers, and ironers for household use. Establishments primarily engaged in manufacturing commercial laundry equipment are classified in Industry 3582.

Laundry and Dry-Cleaning Machinery (*Full Standard Industrial Classification title and number: Commercial Laundry, Dry-Cleaning, and Pressing Machines, 3582.*)—This industry comprises establishments primarily engaged in manufacturing laundry and dry-cleaning equipment and pressing machines for commercial and industrial use. Establishments primarily engaged in manufacturing domestic laundry equipment are classified in Industry 3581.

Some of the items shown in table 6 consist of large complex units and the average value range reported varies considerably. For example, the average values reported for commercial laundry extractors by different companies varied from about \$400 to over \$2,500 a unit. Flatwork ironers varied to an even larger degree, from an average of \$55 each to as much as \$10,000 each for the larger units.

Sewing Machines (*Standard Industrial Classification No. 3583.*)—This industry comprises establishments primarily engaged in manufacturing sewing machines for domestic and industrial use. Also included in this industry are establishments primarily engaged in producing parts and attachments for sewing machines, except needles, cases, and cabinets.

The number of establishments classified in this industry in 1947 is considerably higher than in 1939. This increase is due primarily, not to a growth in the number of producers of complete sewing machines (household types were made by four companies both in 1939 and 1947) but to the classification of many producers of sewing machine parts and attachments in industries other than Sewing Machines in 1939. Inasmuch as practically all of the establishments involved were very small—less than five employees, the 1939 reports for this industry have not been retabulated.

Vacuum Cleaners (*Standard Industrial Classification No. 3584.*)—This industry comprises establishments primarily engaged in manufacturing vacuum cleaners for domestic and industrial use.

In previous censuses, vacuum cleaners were not shown as a separate industry. Reports for 1939 have been retabulated on a comparative basis. Data for earlier years, however, are not available.

Data for value of products and value added by manufacture are not comparable for the years 1939 and 1947. These values for 1939 are somewhat overstated relative to 1947 because a

substantial portion of the industry reported production in terms of retail prices rather than in terms of their factory value as was done in 1947.

Refrigeration Machinery (*Full Standard Industrial Classification title and number: Refrigerators, Refrigeration Machinery, and Complete Air-Conditioning Units, 3585.*)—This industry comprises establishments primarily engaged in manufacturing mechanical and absorption refrigerators for commercial, industrial, and household use, refrigeration machinery, ice-making machinery and equipment, refrigerated showcases and cabinets, and complete air-conditioning units for domestic, commercial, and industrial use. Establishments primarily engaged in manufacturing soda fountains and beer-dispensing equipment are classified in Industry 3997. Also included in this industry are establishments primarily engaged in manufacturing coin-operated refrigerated beverage dispensing, ice cream dispensing, and other types of refrigerated merchandising machines. This industry does not include the construction or installation of cooling, freezing, or air-conditioning systems by building contractors or engineering concerns.

In this industry the total cost of materials and the total value of products data include extensive duplication resulting from the use of products of certain establishments as materials by others. This is especially true of the components, such as compressors, condensers, etc., which are produced by one group of companies and are reported as shipments below. Many of these components are shipped to producers of complete refrigeration equipment, such as household refrigerators, home and farm freezers, display cases, etc., whose value of shipments includes the value of these components. Total material costs and total value of shipments of the industry are, therefore, not shown.

The figures for household mechanical refrigerators represent all units that reached the market in that year, including the assembly of refrigerators by one producer for the account of another, units produced on a contract basis for companies outside the manufacturing field, and units assembled in warehouses.

The data shown for commercial mechanical refrigeration equipment combine self-contained units, remote units with or without condensing units, and cabinets shipped to other than refrigeration equipment producers. These types of units have been combined since each of these types are shipped from the factory directly to distributors or to the ultimate users. Cabinets for commercial refrigeration shipped to other manufacturers of refrigeration equipment have not been included in these data since their inclusion would result in a duplication in the number of units shipped.

For some of the products for which detailed statistics are shown in table 6, the Census of Manufactures report form requested only totals. The detailed statistics were obtained from a quarterly survey on Air Conditioning and Commercial Refrigeration Equipment conducted by the Bureau of the Census during 1947. These groups of products are: Self-contained air-conditioners, (except room); heat exchanger equipment; compressors and compressor units; condensing units; and centrifugal refrigeration systems. Revisions in the data originally submitted on the quarterly survey reports were also received from some establishments in the Census of Manufactures. For certain additional establishments whose reporting on the current survey was incomplete, the detail was obtained as part of the 1947 census canvass.

In order to obtain total data for one of the basic components of refrigeration equipment, data for "captive" compressors (i.e., compressors produced and incorporated into condensing units or unitary equipment in the same establishment) have been collected in this census. When the number of these compressors as shown in table 6, are added to the total shipments of compressors as such, the total number of compressors produced during 1947 can be obtained.

There is not enough comparability between the commodity detail shown in table 6 for 1947 and that published for 1939 to warrant the publication of comparative statistics.

Measuring and Dispensing Pumps (*Standard Industrial Classification No. 3586.*)—This industry comprises establishments primarily engaged in manufacturing measuring and dispensing pumps commonly used in service and filling stations for dispensing gasoline, oil, and grease, including grease guns. Establishments primarily engaged in manufacturing pumps, compressors, and pumping equipment for general industrial use are classified in Industry 3561.

Service and Household Machines, N.E.C. (*Full Standard Industrial title and number: Service-Industry and Household Machines, Not Elsewhere Classified, 3589.*)—This industry comprises establishments primarily engaged in manufac-

turing machines and equipment, not elsewhere classified, for household use or for use in service industries. Establishments primarily engaged in manufacturing household and commercial electrical appliances are classified in Industry 3621.

Included in this industry are household and commercial dishwashing machines, water softeners, floor waxing and polishing machines, carpet sweepers, floor waxing and scrubbing machines, and garbage-disposal units. This industry also covers automotive service equipment which is designed primarily for repairing motor vehicles and sold to automotive service stations. Included as automotive service equipment are some boring machines, lathes, grinders, etc., which are designed specifically for use on pistons, valves, and other automotive components.

The reports for 1939 have been retabulated to provide figures for this industry which was not shown separately in that census. However, the general statistics for 1947 and 1939 as shown in table 1 are not strictly comparable.

A considerable amount of the products primary to this industry was made in 1947 by establishments classified in other industries. Of the total \$129 million of service-industry and household machines shipped during 1947, 18 percent was shipped by establishments classified in other industries.

TABLE 1.—GENERAL STATISTICS FOR THE UNITED STATES: 1947 AND EARLIER CENSUS YEARS

[Money figures in thousands of dollars. For explanation of column captions see GENERAL EXPLANATIONS]

INDUSTRY AND CENSUS YEAR	Number of establishments	All employees		Production and related workers		Value added by manufacture ¹	Cost of materials, fuel, electricity, and contract work ²	Value of products shipped ³
		Number (average for the year) ⁴	Salaries and wages, total ⁵	Number (average for the year) ⁶	Wages, total ⁷			
Domestic laundry equipment:								
1947	65	28,403	\$85,506	23,651	\$65,506	\$161,791	\$280,530	\$442,297
1939	42	9,610	13,890	7,466	9,277	25,236	30,365	61,601
1937	40	10,575	14,250	9,302	11,075	28,081	41,208	69,880
1935	41	10,271	12,005	8,742	9,862	25,384	37,041	62,425
1933	41	8,240	8,528	6,956	8,363	20,181	24,361	44,542
Laundry and dry-cleaning machinery:								
1947	127	9,093	27,435	6,888	19,015	54,347	40,620	94,361
1939	88	n.a.	n.a.	2,783	3,588	13,358	9,020	22,384
1937	62	n.a.	n.a.	3,012	4,274	13,036	10,874	23,910
Sewing machines:								
1947	70	15,305	48,484	12,647	37,926	68,681	28,880	97,011
1939	39	9,598	14,895	7,840	11,157	21,096	8,611	29,707
1937	36	10,195	16,243	9,019	13,551	25,833	9,003	34,836
1935	39	8,699	11,574	7,609	9,053	16,603	9,032	22,635
1933	30	7,136	7,590	6,313	6,034	10,004	2,832	12,926
Vacuum cleaners:								
1947	34	14,880	44,797	12,232	35,260	91,047	74,994	100,184
1939	21	n.a.	n.a.	3,886	5,288	33,113	9,132	42,245
Refrigeration machinery:								
1947	561	120,290	380,216	108,316	290,175	597,486	(⁸)	(⁸)
1939	343	n.a.	n.a.	39,433	54,724	147,009	(⁸)	(⁸)
Measuring and dispensing pumps:								
1947	52	12,083	36,972	8,884	24,174	66,223	60,430	125,052
1939	38	7,395	11,953	5,054	6,751	25,267	19,019	44,286
1937	35	n.a.	n.a.	6,652	8,862	30,363	24,312	54,675
Service and household machines, n.e.c.:								
1947	179	11,232	36,482	8,153	23,051	60,223	65,791	130,894
1939	79	n.a.	n.a.	1,444	1,881	8,497	7,171	16,668

n.a.—Not available.

¹ Value of products less cost of materials, supplies, fuel, electricity, and contract work. For the industries included in this report, see GENERAL EXPLANATIONS—Method of calculating value added by manufacture for selected industries in 1947.

² Figures for years prior to 1935 do not include cost of contract work.

³ For 1947 and 1929, value of products shipped; for all other years, value of products made. See GENERAL EXPLANATIONS—Value of products shipped.

⁴ Comparable data for earlier years are available in "1939 Census of Manufactures," Volume II, Part 2.

⁵ Revised.

⁶ "Laundry and dry-cleaning machinery" was formerly a part of the discontinued "Machinery, n.e.c.," industry. Therefore, no comparable figures are available for prior years.

⁷ The figures for 1939 were obtained from a retabulation of the 1939 returns. No comparable figures are available for earlier years. For Vacuum Cleaners, the figures for value added by manufacture and value of products shipped are not comparable between 1939 and 1947. (See text for further explanation.) For Service and Household Machines, n.e.c., the general statistics for 1939 are not strictly comparable with those for 1947.

⁸ Omitted because of duplication in these figures. See text on industry and GENERAL EXPLANATIONS—Duplication in cost of materials and value of products.

⁹ Measuring and Dispensing Pumps was formerly a part of the discontinued classification "Pumps (hand and power), Pumping Equipment, and Air Compressors." Separate figures are therefore not available prior to 1937.

TABLE 2.—GENERAL STATISTICS BY DIVISIONS AND STATES: 1947
 (Money figures and man-hours in thousands. For explanation of column captions see GENERAL EXPLANATIONS)

INDUSTRY, DIVISION, AND STATE	Number of establishments	All employees		Production and related workers			Value added by manufacture	Cost of materials, fuel, electricity, and contract work	Value of products shipped	Expenditures for new plant and equipment
		Number (average for the year)	Salaries and wages, total	Number (average for the year)	Man-hours, total	Wages, total				
Domestic laundry equipment, total ¹	65	28,403	\$85,596	23,651	48,647	\$65,596	\$161,791	\$280,539	\$442,297	\$9,569
Northeast.....	9	5,638	16,211	4,642	9,458	12,692	29,425	43,045	72,470	1,413
East North Central.....	37	17,529	53,491	14,727	29,683	41,303	106,163	185,008	291,123	6,673
Ohio.....	9	3,788	12,582	3,154	6,576	9,598	29,239	53,533	82,776	1,072
Illinois.....	14	7,613	21,127	6,415	12,753	16,544	41,238	69,210	110,410	3,192
Michigan.....	9	3,830	12,821	3,261	6,710	10,035	21,455	31,568	53,020	811
West North Central.....	12	4,987	15,291	4,079	9,106	11,175	25,173	51,511	70,711	1,382
South and West.....	7	249	603	203	400	426	1,030	975	1,993	101
Laundry and dry-cleaning machinery, total ¹	127	9,093	27,435	6,888	14,790	19,015	54,347	40,626	94,361	1,694
Northeast and North Central.....	98	8,448	25,632	6,356	13,609	17,661	50,886	37,431	87,705	1,516
Massachusetts.....	5	192	474	158	330	380	696	532	1,228	5
New York.....	25	3,642	11,270	2,627	5,782	7,940	25,246	17,858	42,623	803
Ohio.....	8	961	3,014	827	1,866	2,403	5,892	4,742	10,620	281
Illinois.....	18	1,568	5,104	1,072	2,274	3,104	8,728	5,865	14,479	161
Minnesota.....	4	158	468	125	249	329	973	1,028	2,001	36
South.....	15	417	1,113	337	797	800	2,209	2,279	4,488	118
Texas.....	9	235	577	188	427	411	922	1,023	1,945	86
West.....	14	228	690	195	384	554	1,252	916	2,168	60
Sewing machines, total ¹	70	15,305	48,484	12,647	26,095	37,926	68,681	28,880	97,011	5,089
New England.....	14	3,071	10,181	2,444	5,233	7,833	14,418	4,075	18,493	1,599
Middle Atlantic.....	43	7,935	24,962	6,874	13,776	20,870	36,333	13,001	49,168	2,473
Other divisions.....	13	4,299	13,311	3,329	7,066	9,223	17,930	11,804	29,350	1,017
Illinois.....	9	2,731	8,645	2,030	4,585	5,810	13,747	6,902	20,470	751
Vacuum cleaners, total ¹	34	14,880	44,797	12,232	24,434	35,266	91,047	74,994	160,184	4,526
Ohio.....	16	9,473	26,445	7,919	15,287	22,102	51,620	39,970	86,547	2,538
Refrigeration machinery, total ¹	561	129,290	380,216	108,316	220,043	299,175	597,486			46,131
New England.....	24	6,183	19,336	5,032	10,266	14,888	28,403			1,976
Middle Atlantic.....	159	27,595	76,577	21,595	45,967	57,012	109,844			11,077
New York.....	82	6,201	18,358	5,117	10,268	13,569	26,460			1,749
New Jersey.....	25	3,002	8,254	2,452	5,122	6,208	11,368			521
Pennsylvania.....	52	18,192	49,965	14,327	30,577	37,205	72,016			8,807
East North Central.....	171	76,644	233,215	65,067	130,620	187,777	370,257			27,415
Ohio.....	31	30,353	96,406	26,034	52,788	78,354	134,755			9,995
Indiana.....	19	20,672	60,451	17,090	35,003	47,695	100,946			11,015
Illinois.....	50	4,971	15,229	3,970	8,058	10,902	21,043			669
Michigan.....	43	18,212	53,982	16,079	30,625	45,551	102,990			5,181
Wisconsin.....	28	2,436	7,147	1,894	4,140	5,275	11,153			554
West North Central.....	75	9,794	25,582	8,379	17,077	20,393	47,025			2,852
Minnesota.....	31	5,266	13,595	4,559	9,089	11,017	23,447			1,505
Iowa.....	6	347	765	282	647	586	1,445			87
Missouri.....	28	3,531	9,405	3,000	6,174	7,404	19,858			1,133
South.....	58	4,780	11,303	4,226	8,580	8,715	22,141			1,612
Texas.....	18	1,190	2,633	1,047	2,429	2,111	6,780			344
West.....	74	4,494	14,203	3,716	7,493	10,390	21,816			1,199
California.....	49	4,026	12,887	3,303	6,091	9,302	19,771			980
Measuring and dispensing pumps, total ¹	52	12,083	36,972	8,884	17,090	24,174	66,223	60,439	125,052	2,436
Northeast.....	13	2,591	8,390	2,031	3,959	5,997	12,647	15,808	28,472	621
East North Central.....	20	7,546	22,995	5,449	10,337	14,685	43,374	33,353	75,106	1,417
Indiana.....	5	3,824	12,094	2,591	4,846	7,049	21,891	17,424	38,447	864
West North Central.....	9	1,454	4,265	1,018	2,126	2,579	7,935	6,415	14,344	277
South and West.....	10	492	1,322	386	668	913	2,267	4,863	7,130	121
Service and household machines, n. e. c., total ¹	179	11,232	36,482	8,153	17,201	23,051	66,223	65,791	130,894	6,014
New England.....	13	1,742	6,359	1,269	2,514	4,040	9,860	4,705	14,565	229
Middle Atlantic.....	39	3,879	11,793	2,766	5,669	7,153	18,419	26,412	43,989	1,455
New York.....	16	734	2,120	601	1,364	1,542	5,738	6,327	11,317	198
New Jersey.....	11	1,467	4,475	963	1,939	2,368	5,945	5,113	11,058	221
Pennsylvania.....	12	1,678	5,198	1,202	2,365	3,243	6,736	14,972	21,614	1,036
East North Central.....	72	4,232	14,336	3,112	6,908	9,494	29,950	26,959	56,631	3,888
Ohio.....	14	519	1,347	393	818	983	5,023	3,904	8,860	93
Illinois.....	28	2,026	7,473	1,378	3,181	4,527	12,985	13,093	26,042	(^d)
Michigan.....	16	659	2,291	516	1,109	1,530	4,987	5,064	9,949	207
West North Central.....	20	794	2,356	558	1,137	1,332	4,823	4,550	9,373	280
Minnesota.....	10	375	1,302	229	489	550	2,386	2,351	4,737	89
South.....	9	220	582	168	418	424	1,079	1,337	2,416	63
West.....	26	365	1,056	280	555	698	2,092	1,828	3,920	99

⁴ Withheld to avoid disclosing figures for individual companies.

¹ For each producing State not shown separately in the table (see GENERAL EXPLANATIONS "Disclosure of Data for Individual Companies"), there are shown below the number of establishments and, in parentheses, the number of employees for States represented by three or more companies, when possible.

Domestic laundry equipment: Northeast, Massachusetts, 3 (42); Connecticut, 2; New York, 1; New Jersey, 1; Pennsylvania, 2; East North Central, Indiana, 2; Wisconsin, 3; West North Central, Minnesota, 1; Iowa, 8 (4,847); Missouri, 1; Kansas, 2; South and West, Maryland, 1; Kentucky, 2; Oklahoma, 1; Texas, 1; Oregon, 1; California, 1.

Laundry and dry-cleaning machinery: Northeast and North Central, Rhode Island, 1; Connecticut, 1; New Jersey, 10 (328); Pennsylvania, 4 (87); Indiana, 4 (249); Michigan, 6 (201); Wisconsin, 4 (269); Missouri, 6 (285); Nebraska, 1; Kansas, 1; South, Maryland, 1; North Carolina, 1; Kentucky, 2; Arkansas, 1; Louisiana, 1; West, Colorado, 2; Utah, 2; California, 10 (148).

Sewing machines: New England, Massachusetts, 10 (395); Rhode Island, 1; Connecticut, 3; Middle Atlantic, New York, 37 (632); New Jersey, 3 (7,125); Pennsylvania, 3 (90); Other divisions, Ohio, 1; Missouri, 1; Kentucky, 1; Pennsylvania, 2; Illinois, 7 (3,009); Michigan, 1; Wisconsin, 1; Texas, 1; California, 2.

Vacuum cleaners: Connecticut, 1; New York, 2; New Jersey, 1; Massachusetts, 12 (5,565); Rhode Island, 4; Connecticut, 6 (397); West North Central, Nebraska, 3 (424); Kansas, 7 (226); South, Delaware, 1; Maryland, 7 (994); Virginia, 3 (13); West Virginia, 3; North Carolina, 2; South Carolina, 1; Georgia, 4 (631); Florida, 1; Kentucky, 1; Tennessee, 6 (808); Alabama, 3 (171); Arkansas, 1; Louisiana, 1; Oklahoma, 6 (85); West, Montana, 2; Colorado, 1; Arizona, 4 (261); Washington, 12 (119); Oregon, 6 (47).

Measuring and dispensing pumps: Northeast, Massachusetts, 2; Rhode Island, 1; New York, 4 (110); New Jersey, 1; Pennsylvania, 5 (480); East North Central, Ohio, 8 (1,435); Illinois, 1; Michigan, 3 (554); Wisconsin, 3; West North Central, Minnesota, 6 (514); Iowa, 1; Missouri, 1; North Dakota, 1; South and West, Maryland, 1; North Carolina, 1; Texas, 2; California, 6 (143).

Service and household machines, n. e. c.: New England, Massachusetts, 12; Connecticut, 1; East North Central, Indiana, 5 (263); Wisconsin, 9 (765); West North Central, Iowa, 4 (158); South Dakota, 1; Nebraska, 2; Kansas, 3 (22); South, Maryland, 1; North Carolina, 1; Oklahoma, 2; Texas, 5 (56); West, Wyoming, 1; Colorado, 1; Arizona, 1; Washington, 1; California, 22 (268).

² Omitted because of duplication in these figures. See text on industry and GENERAL EXPLANATIONS—Duplication in cost of materials and value of products.

CENSUS OF MANUFACTURES: 1947

TABLE 3.—DETAILED STATISTICS FOR THE UNITED STATES: 1947
 [Money figures in thousands of dollars. For explanation of line captions see GENERAL EXPLANATIONS]

ITEM	Industry						
	Domestic laundry equipment	Laundry and dry-cleaning machinery	Sewing machines	Vacuum cleaners	Refrigeration machinery	Measuring and dispensing pumps	Service and household machines, n. e. c.
ALL ESTABLISHMENTS							
Number of establishments	65	127	70	34	501	52	170
All employees:							
Number (average for the year)	28,403	9,093	15,305	14,880	120,200	12,083	11,232
Salaries and wages, total	\$85,596	\$27,435	\$48,484	\$44,707	\$380,216	\$30,972	\$36,482
Production and related workers:							
Number (average for the year)	23,651	6,888	12,647	12,232	108,316	8,884	8,153
Man-hours, total	48,647	14,790	26,095	24,434	220,003	17,000	17,201
Wages, total	\$65,596	\$19,015	\$37,926	\$35,266	\$299,175	\$24,174	\$23,051
Value added by manufacture	\$161,791	\$54,347	\$68,681	\$91,047	\$507,486	\$66,223	\$66,223
ESTABLISHMENTS REPORTING DETAILED STATISTICS							
Number of establishments	65	127	70	34	445	52	170
All employees:							
Number (average for the year)	28,403	9,093	15,305	14,880	128,421	12,083	11,232
Salaries and wages, total	\$85,596	\$27,435	\$48,484	\$44,707	\$377,883	\$30,972	\$36,482
Production and related workers:							
Number (average for the year)	23,651	6,888	12,647	12,232	107,400	8,884	8,153
Man-hours, total	48,647	14,790	26,095	24,434	218,348	17,000	17,201
Wages, total	\$65,596	\$19,015	\$37,926	\$35,266	\$297,140	\$24,174	\$23,051
Value added by manufacture	\$161,791	\$54,347	\$68,681	\$91,047	\$504,406	\$66,223	\$66,223
Number of employees for pay period ended nearest Oct. 15:							
All employees	30,418	8,275	15,090	15,071	132,218	11,592	11,165
Male	24,958	7,412	13,000	10,869	113,124	9,705	9,282
Female	5,460	863	2,090	4,202	19,094	1,887	1,903
Production and related workers	25,433	6,150	13,234	12,042	110,938	8,411	8,105
Male	21,583	5,098	11,031	9,176	98,434	7,566	7,341
Female	3,850	152	2,203	3,406	12,504	845	764
Force-account construction workers	10	12	209	71			
Administrative, supervisory, sales, and all other	4,975	2,113	2,547	3,029	21,209	3,181	3,060
Male	3,365	1,402	1,700	1,603	14,610	2,130	1,921
Female	1,610	711	787	1,336	6,590	1,042	1,139
All employees, number by month:							
January	25,200	10,246	14,672	12,077	117,917	12,577	11,793
February	26,443	9,916	14,840	13,176	120,810	12,638	11,975
March	27,022	9,772	15,108	13,718	122,687	12,610	11,328
April	27,722	9,573	15,264	14,311	125,709	12,644	11,415
May	27,763	9,304	14,171	14,779	128,456	12,650	11,251
June	28,349	9,070	14,451	15,537	132,272	12,483	10,922
July	27,510	9,005	15,502	15,307	131,005	12,066	10,806
August	28,667	8,871	14,749	15,713	130,958	11,854	11,024
September	29,293	8,592	15,603	15,846	130,474	11,721	11,015
October	30,418	8,275	15,090	15,071	132,218	11,592	11,165
November	30,967	8,175	16,510	15,794	133,212	11,175	11,026
December	31,469	8,192	16,779	15,728	135,254	10,971	11,016
Cost of materials, fuel, electricity, and contract work	\$280,539	\$40,626	\$28,880	\$74,994	(1)	\$60,430	\$65,791
Materials, parts, containers, and supplies	275,325	37,875	27,718	70,211	(1)	58,100	63,643
Fuels, total	1,696	334	513	378	\$5,366	405	345
Bituminous coal	630	116	101	115	2,560	143	123
Anthracite	5	14	193	1			14
Coke	84	2	74		186	20	
Fuel oils	464	159	105	110	1,089	171	124
Gas	492	38	32	138	1,399	62	71
Other fuels	12	5	8	8	107	3	13
Purchased electric energy	1,325	280	528	524	6,990	456	454
Contract and commission work	2,193	2,128	121	3,881	7,613	1,478	1,349
Value of inventories:							
Beginning of year, total	\$36,981	\$27,458	\$31,540	\$10,556	\$197,222	\$26,816	\$22,724
Finished products	3,386	4,223	10,166	3,075	34,395	5,780	3,687
Materials, supplies, and work in process	33,595	23,235	21,380	10,481	162,827	21,030	19,037
End of year, total	46,805	28,274	38,744	27,705	256,208	31,844	25,521
Finished products	5,787	5,727	12,791	6,977	60,046	7,370	4,567
Materials, supplies, and work in process	41,018	22,547	25,953	20,818	195,262	24,474	20,954
Expenditures for plant and equipment:							
New plant and equipment	\$9,569	\$1,694	\$5,089	\$4,526	\$46,131	\$2,436	\$6,014
Construction and major alteration of fixed plants	2,923	387	635	1,697	14,511	985	2,482
Buildings	2,770	333	598	1,382	11,141		2,227
Other construction	153	54	37	315	3,370		255
Machinery and equipment	6,646	1,307	4,454	2,829	31,620	1,451	3,532
Production machinery and equipment	6,043	1,114	4,195	2,335	28,402	1,043	3,063
Other machinery and equipment	603	193	259	494	3,218	408	469
Used plant and equipment, and land	1,144	540	191	387	6,719	309	355
Number of highway-type motor vehicles owned or leased:							
Trucks	128	89	18	32	811	65	110
By manufacturer's rated capacity:							
Under 1½ tons	47	36	8	12	347	32	57
1½ tons	41	26	4		314	20	31
Over 1½ tons and less than 3½ tons	29	23	3	10	105	10	10
3½ tons and less than 5 tons	4	3	2		20	3	8
5 tons and over	7	1	1		25		4
By body type:							
Van	4	5	3	4	29	4	8
Stake or platform	49	46	2	11	408	24	41
Panel or light delivery	48	28	9	12	258	25	43
All other trucks	27	10	4	5	110	12	18
Truck tractors	34	1	11	8	107	1	3
Trailers and semitrailers	41	1	13	15	136	1	4

¹ Not shown because of extensive duplication of values within the industry. (See text on Refrigeration Machinery for further explanation.)

TABLE 4.—SELECTED GENERAL STATISTICS BY SIZE OF ESTABLISHMENT, FOR THE UNITED STATES: 1947

[Money figures in thousands of dollars. For explanation of line captions see GENERAL EXPLANATIONS. Data which cannot be shown without disclosing information for individual companies have been combined with figures for other groups. A ^d appears in the column where the figure has been omitted and the combined figure is printed in italics]

INDUSTRY AND ITEM	Total, all establish- ments	Establishments with an average of—									
		1-4 em- ployees	5-9 em- ployees	10-19 em- ployees	20-49 em- ployees	50-99 em- ployees	100-249 em- ployees	250-499 em- ployees	500-999 em- ployees	1,000- 2,499 employees	2,500 employees and over
Domestic laundry equipment:											
Number of establishments.....	65	7	6	2	8	7	6	10	10	7	2
Number of employees (average for the year).....	28,403	18	66	(^d)	280	479	851	3,813	7,390	15,506	(^d)
Value added by manufacture.....	\$161,791	\$72	\$288	(^d)	\$1,626	\$2,785	\$3,440	\$19,144	\$40,493	\$93,843	(^d)
Laundry and dry-cleaning machinery:											
Number of establishments.....	127	17	19	24	38	17	5	2	2	3	-----
Number of employees (average for the year).....	9,093	40	130	347	1,164	1,161	716	(^d)	2,212	3,323	-----
Value added by manufacture.....	\$54,347	\$228	\$487	\$1,812	\$6,620	\$6,540	\$3,084	(^d)	\$13,220	\$22,350	-----
Sewing machines:											
Number of establishments.....	70	21	13	13	3	8	4	2	2	3	1
Number of employees (average for the year).....	15,305	50	85	180	124	552	1,517	(^d)	12,787	(^d)	(^d)
Value added by manufacture.....	\$68,681	\$310	\$470	\$1,200	\$1,135	\$2,468	\$7,224	(^d)	\$55,874	(^d)	(^d)
Vacuum cleaners:											
Number of establishments.....	34	6	5	3	5	2	3	1	4	4	1
Number of employees (average for the year).....	14,880	14	31	36	323	(^d)	761	(^d)	2,979	10,736	(^d)
Value added by manufacture.....	\$91,047	\$53	\$136	\$164	\$1,702	(^d)	\$5,073	(^d)	\$14,437	\$59,432	(^d)
Refrigeration machinery:											
Number of establishments.....	561	107	80	95	90	64	55	33	13	12	12
Number of employees (average for the year).....	129,290	245	539	1,301	2,827	4,484	8,964	11,180	8,982	20,361	70,407
Value added by manufacture.....	\$597,486	\$1,304	\$2,802	\$5,286	\$13,248	\$22,324	\$43,377	\$56,687	\$41,657	\$92,907	\$317,894
Measuring and dispensing pumps:											
Number of establishments.....	52	15	3	5	9	4	5	3	3	5	-----
Number of employees (average for the year).....	12,083	31	20	66	296	279	747	979	2,135	7,530	-----
Value added by manufacture.....	\$66,223	\$255	\$73	\$234	\$1,336	\$1,664	\$4,112	\$5,709	\$12,091	\$40,749	-----
Service and household machines, n. e. c.:											
Number of establishments.....	179	45	31	29	27	23	12	8	3	1	-----
Number of employees (average for the year).....	11,232	114	211	402	797	1,574	1,888	2,443	3,803	(^d)	-----
Value added by manufacture.....	\$66,223	\$583	\$1,309	\$2,970	\$4,133	\$9,547	\$16,753	\$17,428	\$13,500	(^d)	-----

TABLE 5.—VALUE OF PRODUCTS SHIPPED, BY BROAD CLASSES OF PRODUCTS, FOR THE UNITED STATES: 1947

[The first column shows the total value of shipments of the specified industry, divided among: (A) products classified in (primary to) the industry, (B) products classified in other industries (secondary to the specified industry), and (C) miscellaneous receipts. The second column shows the value of shipments of the primary products of the specified industry reported by establishments in other industries. The third column shows the total value of shipments of the primary products of the specified industry by all reporting manufacturers]

[Money figures in thousands of dollars]

DOMESTIC LAUNDRY EQUIPMENT INDUSTRY	Shipped by—		
	Domestic laundry equipment industry	Other industries	All industries
Total shipments by the industry	\$442,297		
A. Domestic laundry equipment.....	394,243	\$39,712	\$433,955
B. Secondary products (job stampings, automotive stampings, fractional horsepower motors, etc.).....	41,795		
C. Miscellaneous receipts.....	6,259		
Repair work.....	3,865		
Scrap and salable refuse.....	2,230		
Other receipts.....	164		

LAUNDRY AND DRY-CLEANING MACHINERY INDUSTRY	Shipped by—		
	Laundry and dry-cleaning machinery industry	Other industries	All industries
Total shipments by the industry	\$94,361		
A. Commercial laundry, dry-cleaning, and pressing equipment.....	87,152	\$5,926	\$93,078
B. Secondary products.....	5,278		
C. Miscellaneous receipts.....	1,931		

SEWING MACHINES INDUSTRY	Shipped by—		
	Sewing machines industry	Other industries	All industries
Total shipments by the industry	\$97,011		
A. Sewing machines.....	91,784	\$5,398	\$97,182
B. Secondary products (machine tools, needles, pins, hooks and eyes, and similar notions (sewing machine needles).....	4,514		
Other secondary products.....	2,875		
C. Miscellaneous receipts.....	1,639		
Other receipts.....	713		

SERVICE AND HOUSEHOLD MACHINES, NOT ELSEWHERE CLASSIFIED, INDUSTRY	Shipped by—		
	Service and household machines, n. e. c., industry	Other industries	All industries
Total shipments by the industry	\$130,894		
A. Service and household machines, n. e. c.....	105,349	\$23,307	\$128,656
B. Secondary products (machine tools, electric motors, electrical appliances, etc.).....	21,916		
C. Miscellaneous receipts.....	3,629		
Repair work.....	1,225		
Other receipts.....	2,404		

VACUUM CLEANERS INDUSTRY	Shipped by—		
	Vacuum cleaners industry	Other industries	All industries
Total shipments by the industry	\$160,184		
A. Vacuum cleaners.....	133,122	\$17,625	\$150,747
Household vacuum cleaners.....	118,967	14,140	133,107
Commercial and industrial vacuum cleaners.....	4,120	2,398	6,518
Parts for all types of vacuum cleaners, and attachments for commercial and industrial types.....	10,035	987	11,022
B. Secondary products (oil burners, domestic washing machines, small electric motors, etc.).....	25,209		
C. Miscellaneous receipts.....	1,853		
Repair work.....	1,489		
Other receipts.....	364		

REFRIGERATION MACHINERY INDUSTRY	Shipped by—		
	Refrigeration machinery industry	Other industries	All industries
Total shipments by the industry	(1)		
A. Refrigeration machinery.....	(1)	(1)	(1)
Household refrigerators.....	\$514,682	(2)	\$514,682
Home and farm freezers.....	90,366	\$10,040	100,415
Unitary commercial refrigeration equipment.....	241,607	14,432	256,039
Compressors and compressor units.....	46,826	8,656	55,482
Condensing units.....	108,619	4,498	113,117
Other refrigeration machinery.....	175,184	52,106	227,290
B. Secondary products.....	170,654		
Domestic electric ranges.....	46,699		
Other secondary products (industrial machinery, heating and cooking apparatus, metal furniture, etc.).....	123,955		
C. Miscellaneous receipts.....	24,845		
Contract and commission work.....	6,662		
Repair work.....	8,607		
Scrap and salable refuse.....	4,435		
Nonmanufacturing activities.....	5,141		

MEASURING AND DISPENSING PUMPS INDUSTRY	Shipped by—		
	Measuring and dispensing pumps industry	Other industries	All industries
Total shipments by the industry	\$125,052		
A. Measuring and dispensing pumps.....	93,474	\$2,014	\$95,488
B. Secondary products.....	30,065		
Air compressors.....	3,772		
Other secondary products (oil burners, bolts and nuts, pumps, etc.).....	26,293		
C. Miscellaneous receipts.....	1,513		
Repair work.....	1,002		
Other receipts.....	511		

¹ Omitted because of duplication in value of products. See text on industry and GENERAL EXPLANATIONS.—Duplication in cost of materials and value of products.
² Household refrigerators made in other industries which amounted to less than one percent of the shipments of household refrigerators could not be shown separately without disclosing figures for individual companies. These data were combined with household refrigerators shipped by the Refrigeration Machinery Industry.

TABLE 6.—QUANTITY AND VALUE OF PRODUCTS, TOTALS FOR THE UNITED STATES: 1947 AND 1939

[Money figures in thousands of dollars]

PRODUCT	1947			1939	
	Total shipments and interplant transfers		Production (number)	Total production for sale and interplant transfer	
	Number	Value f.o.b. plant		Number	Value f.o.b. plant
	Thousands		Thousands	Thousands	
Household laundry equipment		\$433,955			\$66,282
Washing machines, mechanical	4,236	344,716	4,274	1,499	54,124
Small size	408	8,042	419	11	99
Standard size, electrically driven	3,740	327,058	3,746	1,382	48,512
Nonautomatic, wringer type	2,443	168,773	2,441	n.a.	n.a.
Other (full and semiautomatic and nonautomatic spinner type)	1,297	158,285	1,305		
Standard size, gasoline driven	108	9,616	109	106	5,513
Ironers, mechanical (table and portable)	530	34,834	530	n.a.	4,776
Driers, mechanical (gas and electric)	65	7,415	65		7,382
Other household laundry equipment and parts, accessories and attachments		46,990			
	Units		Units	Units	
Commercial laundry, dry-cleaning, and pressing equipment		93,078			21,107
Commercial laundry equipment and laundry presses		50,545			
Washers	7,984	12,907	8,017		
Extractors	8,499	6,660	8,549		
Drying tumblers	9,678	3,624	9,718		
Ironers, flatwork	3,526	5,762	3,547		
Presses, laundry	21,706	11,624	22,260		
Other commercial laundry equipment and parts, accessories and attachments		9,968			
Dry-cleaning equipment and clothing presses		39,016		n.a.	n.a.
Dry-cleaning units (synthetic and naphtha types)	1,503	6,967	1,530		
Washers	3,787	4,348	3,792		
Extractors	2,360	2,514	2,373		
Drying tumblers	7,662	3,217	7,699		
Dry-cleaning (tailor type) presses	25,302	10,119	25,344		
Other dry-cleaning equipment and parts, accessories and attachments		11,851			
Commercial laundry, dry-cleaning, and pressing machines, not specified by kind		3,517			
	Thousands		Thousands	Thousands	
Sewing machines		97,182			27,846
Household sewing machines	626	32,672	621	457	13,422
Household electric cabinet sewing machines	362	21,771	389		n.a.
Other household sewing machines (including electric portable and foot and hand)	264	10,901	232		
Industrial (except shoe sole stitching machines)	175	30,971		59	6,882
Sewing machine parts and attachments for household and industrial sewing machines (except cases and cabinets, and sewing machine needles)		33,539			7,542
Household type vacuum cleaners		133,107			44,160
Hand type	133	1,469	135	353	2,338
Standard types (upright, cylinder, and other general purpose household types)	3,920	131,638	4,075	1,092	41,822
Other vacuum cleaners and parts for vacuum cleaners		17,540			915
Commercial and industrial vacuum cleaners		6,518			410
Portable	61	5,212	69	(?)	505
Central system		1,306			
Parts for all types of vacuum cleaners and attachments for commercial and industrial types		11,022			(*)
	Units		Units	Units	
Measuring and dispensing pumps		95,488			32,390
Gasoline dispensing pumps:					
Filling station type	203,211	54,857	206,723	110,563	21,204
Computing	197,507	53,390	200,734	93,204	19,433
Noncomputing	5,704	1,457	5,989	17,359	1,861
Airport fueling units	1,281	622	1,302		324
Lubricating-oil outfits (including pump and tank)	47,787	1,801	49,826		2,000
Lubricating-oil pumps (including barrel pumps)	314,164	4,365	310,096		4,383
Grease pumps	n.a.	7,940	n.a.	1,172,505	2,413
Grease guns	n.a.	8,583	n.a.	522,770	
Other measuring and dispensing pumps; and parts, and attachments for measuring and dispensing pumps, sold separately		17,319			1,976
Service-industry and household machines, not elsewhere classified		128,656			n.a.
Dishwashing machines (household and commercial types)	149,564	28,895	152,169		2,632
Water softeners	192,599	13,327	193,446		2,164
Household	186,831	8,822	187,478		1,117
Commercial and industrial	5,768	4,705	5,968		1,047
Floor-waxing and polishing machines, household type	184,973	4,606	186,279	(1)	(1)
Floor-waxing and polishing machines, commercial and industrial type, and floor-scrubbing machines	27,123	5,379	27,876	(1)	(1)
Floor-sanding machines	100,320	9,564	100,297	(1)	(1)
Carpet sweepers	1,595,672	6,243	1,619,308	1,091,747	2,931
Other and not specified service and household machines		60,642		(1)	(1)

See footnotes at end of table.

TABLE 6.—QUANTITY AND VALUE OF PRODUCTS, TOTALS FOR THE UNITED STATES: 1947 AND 1939—Continued
[Money figures in thousands of dollars]

PRODUCT	1947			PRODUCT	1947			Number of compressors produced and incorporated into other equipment at the same establishment ^u	
	Total shipments and interplant transfers		Production (number of units)		Total shipments and interplant transfers		Number of units		Value f.o.b. plant
	Number of units	Value f.o.b. plant							
Household refrigerators ^{1a}		\$514,682		Compressors and compressor units	n.a.	\$55,482	4,802,623		
Household mechanical refrigerators, complete units (electric and gas)	3,977,470	503,472	3,975,367	1/8 horsepower and under	708,351	19,540	3,249,919		
5.4 cubic feet and under	130,178	12,758	128,584	1/5 horsepower	130,964	3,009	176,826		
5.5-6.4 cubic feet	701,005	82,951	704,189	1/4 horsepower and over	n.a.	32,843	1,375,878		
6.5-7.4 cubic feet	1,921,458	226,193	1,914,194	Reported by size and kind: ^{1b}					
7.5-8.4 cubic feet	578,895	83,975	578,792	Refrigerants, except ammonia	234,476	18,405	1,162,180		
8.5-9.4 cubic feet	498,291	71,516	500,813	1/4 horsepower	87,852	3,203	579,821		
9.5 cubic feet and over	147,643	26,079	148,795	1/2 horsepower	80,596	2,935	304,909		
Household ice refrigerators	340,062	11,210	342,610	3/4 horsepower	35,582	1,165	111,534		
				1 horsepower	5,790	277	71,520		
Home and farm freezers (for freezing food, storing frozen food, or both purposes), complete units	607,240	100,415	610,681	1 1/2 horsepower	4,711	228	22,428		
4.4 cubic feet and under	93,814	9,109	95,006	2 horsepower	1,522	73	19,226		
4.5-6.4 cubic feet	184,435	24,234	187,928	3 horsepower	2,827	191	12,028		
6.5-8.4 cubic feet	115,220	17,486	115,154	5 horsepower	2,707	203	16,570		
8.5-12.4 cubic feet	99,099	19,599	99,046	7 1/2 horsepower	4,341	869	18,650		
12.5-16.4 cubic feet	44,980	20,376	46,715	10 horsepower	1,279	465	2,003		
16.5-20.4 cubic feet	37,953	9,611	33,234	15 horsepower	1,453	848	1,624		
20.5 cubic feet and over	31,739	9,611	33,598	20 horsepower	1,773	1,177	838		
				25 horsepower	674	774	379		
Unitary commercial refrigeration equipment		256,039		30 horsepower	1,358	1,279	253		
Mechanical units (including (a) self-contained units (b) remote units with or without condensing units and (c) cabinets, except cabinets shipped to other manufacturers of commercial refrigeration equipment)				40 horsepower	309	558	93		
Walk-in coolers	16,305	247,117		50 horsepower	428	1,395	113		
Refrigerators (except dairy refrigerators and wall boxes, and florists' cabinets)	59,507	19,669		60 horsepower	639	1,301	57		
25 cubic feet and under	21,652	5,706		75 horsepower	224	544	34		
26-40 cubic feet	20,295	6,323		100 horsepower	104	339	68		
41-60 cubic feet	11,520	4,509		100 horsepower and over	100	521	32		
61 cubic feet and over	6,040	3,131		Ammonia refrigerants	4,415	9,481	753		
Dairy refrigerators and wall boxes	4,359	2,180		1/4 to 3 horsepower	76	24	38		
Florists' cabinets	650	550		5 horsepower	145	87	204		
Dough retarders	3,204	1,334		7 1/2 horsepower	231	139	160		
Display cases for meat, dairy products, fish and vegetables (except frozen food)	77,241	41,778		10 horsepower	369	258	197		
Closed	57,563	31,234		15 horsepower	502	455	104		
Top or single-duty	15,127	8,394		20 horsepower	441	488	50		
Double-duty	35,676	20,027		25 horsepower	402	592			
Full-vision	6,760	2,813		30 horsepower	503	772			
Open or self-service	19,878	10,544		40 horsepower	294	580			
Single-duty	9,859	5,262		50 horsepower	288	677			
Double-duty	9,819	5,282		60 horsepower	341	881			
Low temperature freezing and dispensing equipment:				75 horsepower	240	828			
Frozen food storage, dispensing, and display cabinets, including coin-operated	45,520	19,840		100 horsepower	286	1,155			
Ice cream counter freezers (including frozen-custard machines)	6,678	5,916		101 to 200 horsepower	218	1,264			
Ice cream hardening cabinets	11,115	3,444		201 to 300 horsepower	37	348			
Ice cream dispensing cabinets	156,065	35,875		301 horsepower and over	42	933			
Mechanical drinking water coolers	164,800	27,775		Compressors and compressor units, 1/4 horsepower and over, not reported by size or type	n.a.	4,957	212,945		
Pressure type	130,376	23,792							
Bottle type	34,424	3,983							
Mechanical beverage-cooling and dispensing equipment (including coin-operated equipment)	316,183	62,166	n.a.						
Bottled beverage coolers	292,778	55,764	n.a.						
Coin-operated	93,713	24,978	n.a.						
Other than coin-operated	199,065	30,788	205,434						
Dry type	84,517	15,761	87,911						
Wet type	114,648	15,027	117,523						
Bulk beverage dispensers (including malt dispensers and pre-cooler cabinets)	23,405	6,402	n.a.						
Coin-operated	4,601	3,694	n.a.						
Other than coin-operated	18,804	2,708	10,997						
Other commercial mechanical refrigeration units (excluding farm and dairy milk coolers but including egg refrigeration cases, low temperature laboratory and industrial equipment, mortuary refrigerators, etc.)		6,775							
Farm and dairy milk coolers, immersion type, mechanically refrigerated	37,563	7,785	40,159						
5 cans and under	16,707	2,905	18,043						
6 cans and over	20,856	4,880	22,116						
Cabinets for mechanical units, shipped to other manufacturers of commercial refrigeration equipment		1,264							
Nonmechanical units		5,102							
Nonmechanical drinking water coolers	n.a.	1,336							
Nonmechanical bottled beverage coolers	38,725	1,685							
Other nonmechanical units		2,081							
Commercial refrigeration equipment, not reported by type		2,556							

PRODUCT	Total shipments and interplant transfers		Production (number of units)
	Number of units	Value f.o.b. plant	
Condensing units	1,501,215	\$113,117	
1/6 horsepower and under	543,339	17,013	
1/5 horsepower	59,809	3,075	
1/4 horsepower and over	898,067	92,429	
Reported by size and kind: ^{1a}			
Refrigerants, except ammonia	831,388	84,357	
Air-cooled	782,848	67,875	
Open type	527,860	40,438	
1/4 horsepower	130,427	8,519	
1/2 horsepower	108,086	14,698	
3/4 horsepower	100,828	9,952	
1 horsepower	51,434	6,945	
1 1/2 horsepower	21,639	3,641	
2 horsepower	12,650	2,624	
3 and 5 horsepower	8,325	1,031	
Hermetic type	3,880	1,128	
1/4 horsepower	254,979	18,437	
1/2 horsepower	149,103	11,148	
3/4 horsepower	86,218	5,514	
1 horsepower and over	19,058	1,775	
Water-cooled	48,540	16,482	
1/2 and 3/4 horsepower	674	66	
1/2 horsepower	7,222	918	
3/4 horsepower	6,859	1,094	
1 horsepower	6,331	1,139	
1 1/2 horsepower	5,720	1,274	
2 horsepower	4,278	1,071	
3 horsepower	5,093	1,682	
5 horsepower	5,388	2,288	
7 1/2 horsepower	2,356	1,598	
10 horsepower	1,885	1,731	
15 horsepower	1,033	1,244	
20 horsepower	403	654	
25 horsepower	308	464	
30 horsepower	122	263	
40 horsepower	149	347	
50 horsepower	92	276	
60 horsepower and over	110	473	

See footnotes at end of table.

See footnotes at end of table.

TABLE 6.—QUANTITY AND VALUE OF PRODUCTS, TOTALS FOR THE UNITED STATES: 1947 AND 1939—Continued

PRODUCT	1947			PRODUCT	1947		
	Total shipments and interplant transfers		Production (number of units)		Total shipments and interplant transfers		Production (number of units)
	Number of units	Value f.o.b. plant			Number of units	Value f.o.b. plant	
Condensing units—Continued				Other refrigeration machinery and air-conditioning equipment—Continued			
Reported by size and kind:				Heat exchanger equipment ¹⁸ —Continued			
Ammonia refrigerants, reciprocating, water-cooled.....	1,646	\$2,107		Unit coolers ¹⁹ —Continued			
$\frac{1}{4}$ to 3 horsepower.....	18	9		Refrigeration.....	n.a.	\$13,959	
3 horsepower.....	47	25		Ceiling and wall mounted.....	n.a.	9,208	
5 horsepower.....	313	232		Under 500 B.t.u./hr.....	n.a.	7	
7½ horsepower.....	205	199		500 to 1,000 B.t.u./hr.....	n.a.	94	
10 horsepower.....	384	436		1,001 to 2,000 B.t.u./hr.....	n.a.	1,065	
15 horsepower.....	407	622		2,001 to 4,000 B.t.u./hr.....	n.a.	1,083	
20 horsepower and over.....	272	584		4,001 to 6,000 B.t.u./hr.....	n.a.	909	
Condensing units, $\frac{1}{4}$ horsepower and over, not reported by size or type.....	65,033	5,965		6,001 to 8,000 B.t.u./hr.....	n.a.	1,324	
				8,001 to 12,000 B.t.u./hr.....	n.a.	1,410	
				12,001 to 18,000 B.t.u./hr.....	n.a.	1,695	
				Over 18,000 B.t.u./hr.....	n.a.	1,621	
Other refrigeration machinery and air-conditioning equipment.....		227,290		Floor mounted, dry type.....	n.a.	2,684	
Packaged air-conditioners.....	74,976	39,509	77,538	5 tons and under.....	n.a.	767	
Room air-conditioners.....	42,904	9,930	43,542	5.1 to 7.5 tons.....	n.a.	785	
Self-contained air-conditioners, except room ¹⁸	32,072	29,579	33,996	7.6 to 10 tons.....	n.a.	531	
2 tons and under.....	1,179	893		10.1 to 15 tons.....	n.a.	429	
3 tons.....	8,243	5,292		Over 15 tons.....	n.a.	172	
5 tons.....	17,978	15,750		Floor mounted, spray type.....	n.a.	2,067	
7½ tons.....	1,572	2,096		5 tons and under.....	n.a.	52	
10 tons.....	897	1,821		5.1 to 7.5 tons.....	n.a.	812	
15 tons.....	569	1,365		7.6 to 10 tons.....	n.a.	197	
20 tons.....	184	408		10.1 to 15 tons.....	n.a.	431	
Over 20 tons.....	251	957		Over 15 tons.....	n.a.	575	
Not reported by size.....	1,199	937					
Ice-making machines.....	7,822	3,122		Other heat exchanger equipment.....		28,246	
Heat exchanger equipment ¹⁸		63,025		Condensers, shell and tube and shell and coil.....		5,903	
Evaporative condensers ¹⁹	n.a.	7,875		Shell and tube liquid coolers.....		1,242	
Under 3 tons.....	n.a.	112		Shell and coil liquid coolers.....		426	
3 to 5 tons.....	n.a.	336		Fin coils, heating, other than forced air units.....		5,358	
5.1 to 7.5 tons.....	n.a.	264		Fin coils, cooling, other than forced air units.....		10,415	
7.6 to 10 tons.....	n.a.	467		Evaporators, plate type.....		4,902	
10.1 to 15 tons.....	n.a.	528		Heat exchanger equipment not reported by kind.....		6,737	
15.1 to 20 tons.....	n.a.	445		Centrifugal refrigeration systems ¹⁸	n.a.	7,889	
20.1 to 30 tons.....	n.a.	1,334		100 horsepower and under.....	39	597	
30.1 to 50 tons.....	n.a.	1,972		101 to 200 horsepower.....	93	1,412	
50.1 to 100 tons.....	n.a.	2,185		201 to 300 horsepower.....	82	1,954	
Over 100 tons.....	n.a.	232		301 to 400 horsepower.....	41	1,085	
Unit coolers ¹⁹	n.a.	20,167		401 to 500 horsepower.....	23	721	
Air-conditioning, remote type.....	n.a.	6,208		501 to 750 horsepower.....	34	1,270	
3 tons and under.....	n.a.	545		751 horsepower and over.....	16	743	
3.1 to 5 tons.....	n.a.	916		Not reported by size.....	n.a.	197	
5.1 to 10 tons.....	n.a.	979		Other parts, components and accessories for air-conditioning and refrigeration equipment.....		76,848	
10.1 to 25 tons.....	n.a.	2,276		Other air-conditioning and refrigeration equipment not called for separately, and air-conditioning and refrigeration equipment not reported by kind ²⁰		36,897	
Over 25 tons.....	n.a.	1,492					

n.a.—Not available.

¹ Includes those with dishwasher attachments.² Washing machines with a rated capacity not exceeding four pounds of dry weight.³ Quantity figures represent the number of heads. They include heads sold with cabinets or cases as well as heads sold separately.⁴ The 1939 data for industrial, except shoe sole stitching, machines include only a small number of machines designed for use on textiles.⁵ The 1939 and 1947 values are not strictly comparable. The 1947 value represents factory values. The 1939 value in some cases is the delivery price to customers.⁶ The value of 131.6 million dollars includes the value of attachments and cleaning tools, both those shipped together with the vacuum cleaners and those shipped separately.⁷ Comparable quantity figure not available.⁸ In 1939 data for parts for all types of vacuum cleaners were not collected separately, but were included with parts and attachments for industrial machinery.⁹ Number of units represents the number of pumps. Twin pumps were counted as two units.¹⁰ Number of units represents the number of meters.¹¹ More than four-fifths of the number of dishwashing machines produced and shipped in 1947 were the household type. In 1939, for \$2,353,000 of the value of production, the number of dishwashing machines produced was 12,239.¹² Includes "for sale to consumer" and "service" types which were combined to avoid disclosing figures for individual companies.¹³ Although separate statistics were requested for commercial and industrial type floor-waxing and polishing machines and for floor-scrubbing machines, combined figures were reported for these machines in many cases.¹⁴ Separate statistics not called for in 1939. Included in miscellaneous items of industrial machinery.¹⁵ Includes garbage disposal units and automotive service equipment such as steam cleaners, valve refacers, piston grinders, etc., as well as miscellaneous types of household and service machines.¹⁶ Includes refrigerators for house trailers.¹⁷ These figures cover compressors incorporated into condensing units, unitary equipment, and other equipment by the establishment manufacturing the compressors. They do not include compressors shipped as such.¹⁸ Detailed data obtained from the Facts for Industry Series M52A, Air Conditioning and Commercial Refrigeration Equipment: 1947, plus revisions. See text for explanation.¹⁹ Although quantity data were published for these items in the Facts for Industry releases, a number of companies included in the 1947 Census of Manufactures but not in the Facts for Industry survey did not report quantity. For 90 percent of the value of evaporative condensers and 97 percent of the value of unit coolers, quantity data can be obtained from Facts for Industry Series M52A, Air Conditioning and Commercial Refrigeration Equipment: 1947.²⁰ Includes cabinets for household refrigerators, cabinets for home and farm freezers, absorption and adsorption systems, etc.

CENSUS OF MANUFACTURES: 1947

TABLE 7.—SELECTED MATERIALS CONSUMED, BY KIND: 1947

[The table below summarizes the consumption of selected metal shapes by manufacturers during 1947. For each shape, manufacturing establishments were required to report consumption, in quantity and cost, provided that such usage during 1947 exceeded the following amounts: For iron castings, steel castings, each of 6 carbon steel shapes—50 short tons; for alloy steel bars and all other alloy steel—25 short tons; for stainless steel, brass and copper wire mill shapes, copper and brass castings, Aluminum mill shapes and aluminum castings—10 short tons]

[Money figures in thousands of dollars]

METAL SHAPE	DOMESTIC LAUNDRY EQUIPMENT INDUSTRY			LAUNDRY AND DRY-CLEANING MACHINERY INDUSTRY			SEWING MACHINES INDUSTRY			VACUUM CLEANERS INDUSTRY		
	No. of estabs.	Short tons	Cost	No. of estabs.	Short tons	Cost	No. of estabs.	Short tons	Cost	No. of estabs.	Short tons	Cost
Iron castings, rough and semifinished.....	22	31,351	\$6,488	23	31,260	\$6,616	9	17,542	\$4,720	(1)	2,383	\$942
Steel castings, rough and semifinished.....				5	784	351						
Steel mill shapes and forms.....	n.a.	289,361	30,540	n.a.	22,064	3,304	n.a.	11,705	1,429	n.a.	32,436	5,761
Carbon steel:												
Bars and bar shapes.....	27	25,153	3,073	12	3,267	402	6	6,174	655	8	3,171	451
Sheet and strip.....	41	220,985	24,023	19	10,390	1,178	6	4,748	559	12	25,114	4,238
Structural shapes.....	(1)	(2)	(2)	(1)	1,253	142				(1)	(2)	(2)
Plates.....	(1)	40,000	2,342	7	4,710	472						
Wire.....	(1)	787	65	(1)								
All other mill shapes and forms.....	(1)	1,127	54	(1)	305	16	(1)	(2)	(2)	(1)	2,054	368
Alloy steel, except stainless:												
Bars and bar shapes.....	(1)	227	42	(1)	1,568	593				(1)	1,520	237
All other mill shapes and forms.....	(1)			(1)			(1)	(2)	(2)	(1)	577	447
Stainless steel.....	12	1,082	941	11	571	501						
Copper and copper-base alloy:												
Brass and wire mill shapes and forms.....	12	787	549	5	559	272	(1)	90	38	10	1,076	941
Castings, rough and semifinished.....	6	288	270	5	862	702						
Aluminum:												
Aluminum mill shapes.....	21	4,919	3,167	5	305	297				8	920	904
Castings, rough and semifinished.....	25	9,018	7,015	8	810	778	(1)	308	167	17	5,724	5,492

METAL SHAPE	REFRIGERATION MACHINERY INDUSTRY			MEASURING AND DISPENSING PUMPS INDUSTRY			SERVICE AND HOUSEHOLD MACHINES, NOT ELSEWHERE CLASSIFIED, INDUSTRY		
	No. of estabs.	Short tons	Cost	No. of estabs.	Short tons	Cost	No. of estabs.	Short tons	Cost
Iron castings, rough and semifinished.....	47	64,035	\$13,675	17	15,792	\$4,283	10	4,851	\$1,637
Steel castings, rough and semifinished.....	7	7,442	1,912	(1)	(4)	(4)	(1)	786	451
Steel mill shapes and forms.....	n.a.	822,462	92,878	n.a.	43,949	4,706	n.a.	29,416	3,788
Carbon steel:									
Bars and bar shapes.....	39	29,788	3,538	12	9,903	1,086	10	1,848	206
Sheet and strip.....	151	725,182	70,874	14	27,378	2,846	26	20,831	2,358
Structural shapes.....	19	3,644	443	(1)	4,228	350	(1)	2,727	239
Plates.....	19	13,355	1,101	(1)	521	36	5	1,556	139
Wire.....	11	5,230	554	(1)	(2)	(2)	5	1,445	178
All other mill shapes and forms.....	23	29,706	4,133	(1)	1,572	243	(1)	244	63
Alloy steel, except stainless:									
Bars and bar shapes.....	6	826	141	(1)			(1)	96	24
All other mill shapes and forms.....	(1)	302	247	(1)	217	27			
Stainless steel.....	77	14,429	11,847	(1)	130	118	8	669	583
Copper and copper-base alloy:									
Brass and wire mill shapes and forms.....	83	25,232	21,310	9	1,907	1,027	11	1,375	963
Castings, rough and semifinished.....	17	608	507	8	898	711	14	769	622
Aluminum:									
Aluminum mill shapes.....	69	16,845	10,066	(1)	137	100	5	90	51
Castings, rough and semifinished.....	8	1,974	1,166	7	510	478	10	712	859

^d Withheld to avoid disclosing figures for individual companies.

¹ Less than 5 establishments.

² Data combined with "All other carbon steel mill shapes and forms" in order to avoid disclosing the operations of individual companies.

BALL AND ROLLER BEARINGS; VALVES; AND MACHINE SHOP PRODUCTS

This report shows the 1947 Census of Manufactures statistics for establishments primarily engaged in the production of valves and fittings (except plumbers' fittings), fabricated pipe and fittings (from purchased pipe), ball and roller bearings, miscellaneous parts for machinery and equipment, not elsewhere classified, and establishments engaged primarily in performing machining operations on materials owned by others. These establishments have been classified in four industries described separately below.

Valves and Fittings (Except Plumbers') (*Full Standard Industrial Classification title and number: Valves and Fittings (Except Plumbers' Valves), 3591.*)—This industry comprises establishments primarily engaged in manufacturing valves for controlling the flow of liquids or gases in pipes and mains, and for machinery, including parts and fittings for such valves. Establishments primarily engaged in manufacturing plumbers' fittings (faucets, spigots, etc.) are classified in Industry 3431.

In the 1939 Census of Manufactures, this industry did not exist as a separate industry. Establishments primarily engaged in manufacturing valves and fittings (except plumbers') were classified in the industries: Steam Fittings; Aluminum Products, Not Elsewhere Classified; and Machine Shop Products. The reports for 1939 have been retabulated on a basis comparable with 1947. Data for earlier years, however, are not available.

Although quantity data were requested for some of the product items, these data cannot be published since many of the reporting establishments indicated that their records did not provide the number of units or tons shipped.

Establishments classified in the Valves and Fittings (Except Plumbers' Fittings) Industry shipped \$504 million of valves and fittings (except plumbers' fittings) and \$111 million of other products such as plumbing fixtures, fittings and trim, industrial process instruments, fabricated pipe, etc.

Fabricated Pipe and Fittings (*Standard Industrial Classification No. 3592.*)—This industry comprises establishments primarily engaged in cutting, threading, bending, and otherwise fabricating pipe and pipe fittings from purchased pipe. Establishments primarily engaged in manufacturing cast-iron pipe and fittings are classified in Industry 3321, welded and heavy-riveted pipe in Industry 3393, and seamless steel pipe in Industry 3312.

In the 1939 Census of Manufactures, this industry did not exist as a separate industry. Establishments primarily engaged in cutting, threading, bending, etc., pipe and pipe fittings from purchased pipe were classified in the industry for machine shop products, not elsewhere classified. Reports for 1939 have been retabulated on a basis comparable with 1947. Data for earlier years, however, are not available.

Of the total value of \$110 million of fabricated pipe and fittings, 17 percent was shipped by establishments classified in other industries. Establishments classified in the Fabricated Pipe and Fittings Industry shipped \$92 million of fabricated pipe and fittings and \$20 million of other products such as valves and fittings for piping systems, industrial machinery, stampings, etc.

Ball and Roller Bearings (*Standard Industrial Classification No. 3593.*)—This industry comprises establishments primarily engaged in manufacturing ball and roller bearings and parts. Establishments primarily engaged in manufacturing bearings, except ball and roller, are classified in Industry 3566.

In 1939, data for establishments producing ball and roller bearings and those producing other power-transmission equipment were combined in the industry "Mechanical Power-Transmission Equipment." Reports for 1939 have been retabulated on a basis comparable with 1947. Data for earlier years, however, are not available.

Machine Shops (*Full Standard Industrial Classification title and number: Machine Shops (Jobbing and Repair), 3599.*)—This industry comprises establishments primarily engaged in producing machine and equipment parts, not elsewhere classified, from materials owned by them or performing machining operations on materials owned by others. These establishments usually operate on a job or order basis and are equipped with machine tools and other power-driven metalworking machinery capable of manufacturing a wide range of machine and equipment parts. Machine shops classified in this industry are characterized by their method of operation rather than their product, and the fact that they may be primarily engaged in repair work does not exclude them from this classification; however, machine shops engaged exclusively, or almost exclusively, in repair work are classified in repair industries.

For the 1947 Census of Manufactures, many of the commodities which in 1939 were classified in the Machine Shop Products Industry have been reclassified into other industries. The reports for 1939 have been retabulated to reflect these changes as well as other revisions in the 1939 statistics. Data for earlier years, however, are not available. In the 1939 census, statistics were collected for establishments engaged in machine shop repairs. However, in 1947 these establishments are not included in the Census of Manufactures, in accordance with the Standard Industrial Classification.

A comparison of the number of establishments in 1947 with that for 1939 shows a very large increase, principally in small establishments. Although it is undoubtedly true that the industry has expanded greatly since 1939, it is probable that some of the increase shown in the number of establishments is due to the fact that some small establishments, although active in 1939, were either not included in the census for that year, or were classified in other industries.

CENSUS OF MANUFACTURES: 1947

TABLE 1.—GENERAL STATISTICS FOR THE UNITED STATES: 1947 AND EARLIER CENSUS YEARS

[Money figures in thousands of dollars. For explanation of column captions see GENERAL EXPLANATIONS]

INDUSTRY AND CENSUS YEAR	Number of establishments	All employees		Production and related workers		Value added by manufacture	Cost of materials, fuel, electricity, and contract work	Value of products shipped
		Number (average for the year)	Salaries and wages, total	Number (average for the year)	Wages, total			
Valves and fittings (except plumbers):								
1947.....	453	80,075	\$238,951	65,855	\$184,638	\$393,860	\$243,603	\$637,463
1939 ¹	298	n.a.	n.a.	32,159	43,936	107,511	57,416	164,927
Fabricated pipe and fittings:								
1947.....	212	10,568	33,362	8,273	23,172	58,786	57,190	115,976
1939 ¹	112	n.a.	n.a.	2,792	3,737	10,842	12,172	23,014
Ball and roller bearings:								
1947.....	94	52,174	153,333	45,075	125,711	259,060	106,524	365,584
1939 ¹	58	n.a.	n.a.	19,164	27,219	77,497	27,989	105,486
Machine shops:								
1947.....	3,112	58,160	161,972	48,638	126,009	271,870	138,394	410,264
1939 ¹	1,325	n.a.	n.a.	24,333	32,076	82,106	48,566	130,672

n.a.—Not available.

¹ Value of products less cost of materials, supplies, fuel, electricity, and contract work. See GENERAL EXPLANATIONS—Value added by manufacture.² For 1947, value of products shipped; for 1939, value of products made. See GENERAL EXPLANATIONS—Value of products shipped.³ The returns for 1939 have been retabulated to provide figures comparable with those for 1947. No comparable figures are available for prior years.

TABLE 2.—GENERAL STATISTICS BY DIVISIONS AND STATES: 1947

[Money figures and man-hours in thousands. For explanation of column captions see GENERAL EXPLANATIONS]

INDUSTRY, DIVISION, AND STATE	Number of establishments	All employees		Production and related workers			Value added by manufacture	Cost of materials, fuel, electricity, and contract work	Value of products shipped	Expenditures for new plant and equipment
		Number (average for the year)	Salaries and wages, total	Number (average for the year)	Man-hours, total	Wages, total				
Valves and fittings (except plumbers), total	453	80,075	\$238,951	65,855	132,765	\$184,638	\$393,860	\$243,603	\$637,463	\$20,877
New England.....	52	8,556	24,552	6,907	14,613	18,945	30,844	20,871	57,715	2,799
Massachusetts.....	30	5,220	14,989	4,125	8,880	11,191	23,344	12,284	35,628	1,522
Connecticut.....	12	1,448	3,828	1,215	2,406	2,950	6,733	4,709	11,532	476
Middle Atlantic.....	129	18,324	52,041	15,264	31,239	40,720	85,638	52,437	138,075	4,834
New York.....	43	3,329	9,283	2,830	5,966	7,522	15,334	8,813	24,147	565
New Jersey.....	26	2,126	6,672	1,658	3,404	4,722	11,169	6,667	17,736	434
Pennsylvania.....	60	12,869	36,086	10,776	21,869	28,476	59,135	37,057	96,192	3,835
East North Central.....	161	40,214	124,332	33,124	65,707	90,245	203,019	125,016	328,035	8,535
Ohio.....	45	9,342	26,490	7,659	15,056	20,151	44,195	24,068	68,263	2,357
Indiana.....	14	1,998	5,959	1,571	3,311	4,286	13,139	9,585	22,724	516
Illinois.....	52	18,098	60,826	15,077	30,829	48,571	94,322	51,222	145,644	3,147
Michigan.....	35	7,798	23,514	6,414	11,789	17,584	30,320	31,031	70,360	1,976
Wisconsin.....	15	2,978	7,543	2,403	4,722	6,553	12,034	10,010	22,044	539
West North Central.....	19	2,431	7,194	2,059	4,423	5,609	12,603	9,203	21,806	642
Iowa.....	5	1,194	3,634	1,038	2,402	3,105	6,180	5,303	11,492	404
South Atlantic.....	6	501	1,141	418	894	907	1,234	758	1,992	(d)
East South Central.....	8	4,994	13,442	4,259	8,396	10,541	20,240	13,810	40,059	2,018
Alabama.....	3	2,534	6,368	2,256	4,357	5,130	11,826	5,396	17,212	886
West South Central.....	20	1,106	3,149	797	1,610	2,065	6,383	4,783	11,166	(d)
Texas.....	13	676	2,015	535	1,094	1,367	3,887	3,093	7,090	(d)
West.....	58	3,949	13,100	2,967	5,883	9,606	21,890	15,825	37,715	1,141
California.....	50	3,864	12,855	2,893	5,724	9,397	21,268	15,653	30,818	1,107
Fabricated pipe and fittings, total	212	10,568	33,362	8,273	16,781	23,172	58,786	57,190	115,976	4,084
New England.....	14	498	1,490	392	790	900	2,788	2,504	5,292	171
Middle Atlantic.....	64	3,326	11,003	2,320	4,854	6,667	18,023	17,709	35,732	1,117
East North Central.....	65	3,752	11,743	3,061	6,289	8,707	20,499	19,239	39,738	1,469
West North Central.....	12	666	1,853	576	1,176	1,611	4,418	5,470	9,894	204
South.....	21	1,431	4,170	1,188	2,300	2,847	7,225	6,079	13,905	692
Pacific.....	36	895	3,094	728	1,372	2,367	5,832	5,583	11,415	431
Ball and roller bearings, total	94	52,174	153,333	45,075	91,323	125,711	259,060	106,524	365,584	21,872
New England.....	19	10,456	58,435	16,378	34,430	46,901	96,139	26,115	121,254	5,562
Connecticut.....	15	10,367	58,232	16,307	34,291	46,762	94,851	25,998	120,849	5,551
Middle Atlantic.....	35	12,548	37,905	10,546	21,557	29,899	62,838	32,529	95,367	3,767
Pennsylvania.....	15	5,475	16,213	4,657	9,650	13,366	26,410	13,770	40,189	1,662
East North Central.....	30	19,899	56,282	17,924	34,560	48,463	99,955	47,241	147,196	12,378
Illinois.....	9	2,359	7,728	1,937	4,274	6,067	11,475	7,837	19,812	407
South.....	5	226	612	161	408	370	943	530	1,473	129
West.....	5	45	99	36	68	78	185	109	294	36
Machine shops, total	3,112	58,160	161,972	48,638	100,024	126,009	271,870	138,394	410,264	12,850
New England.....	310	4,788	12,406	4,177	8,697	9,884	20,410	11,372	31,782	739
Massachusetts.....	151	2,138	5,568	1,870	3,909	4,471	8,423	3,456	11,879	271
Rhode Island.....	35	961	2,209	846	1,709	1,770	4,187	4,498	8,625	115
Connecticut.....	102	1,460	4,131	1,253	2,625	3,200	7,035	3,056	10,091	304
Middle Atlantic.....	755	13,099	37,514	10,995	23,041	28,582	58,887	40,587	99,474	2,706
New York.....	341	4,281	12,328	3,722	8,118	9,646	19,552	9,183	28,735	935
New Jersey.....	172	2,661	7,476	2,272	4,663	6,121	12,239	11,111	23,350	498
Pennsylvania.....	242	6,157	17,710	5,001	10,260	12,815	27,096	20,293	47,380	1,273
East North Central.....	1,101	25,442	71,273	20,926	42,706	55,226	123,862	57,597	181,459	5,578
Ohio.....	323	4,623	13,340	4,014	8,343	10,560	23,090	9,534	32,624	1,107
Indiana.....	115	5,111	12,765	3,732	7,560	9,781	25,120	12,214	37,334	776
Illinois.....	287	4,833	14,847	3,916	8,171	10,526	23,748	12,708	36,456	1,154
Michigan.....	333	9,092	26,110	7,658	15,273	20,458	44,185	19,803	63,988	2,125
Wisconsin.....	133	1,783	4,711	1,590	3,359	3,901	7,719	3,338	11,057	416
West North Central.....	173	4,761	12,030	4,007	7,973	9,205	22,610	9,142	31,752	1,365
Minnesota.....	48	695	1,795	610	1,307	1,439	2,748	1,742	4,490	211
Missouri.....	65	2,878	7,405	2,340	4,600	5,489	14,213	4,038	18,251	921

See footnotes at end of table.

TABLE 2—GENERAL STATISTICS BY DIVISIONS AND STATES: 1947—Continued

INDUSTRY, DIVISION, AND STATE	Number of establishments	All employees		Production and related workers			Value added by manufacture	Cost of materials, fuel, electricity, and contract work	Value of products shipped	Expenditures for new plant and equipment
		Number (average for the year)	Salaries and wages, total	Number (average for the year)	Man-hours, total	Wages, total				
Machine shops—Continued										
South	204	5,007	\$13,205	4,176	8,704	\$10,302	\$19,136	\$8,833	\$27,969	\$869
Maryland	26	2,107	5,924	1,631	3,354	4,242	6,793	2,627	9,420	376
North Carolina	16	386	989	323	720	800	1,151	875	2,026	57
Alabama	11	199	483	178	354	387	588	442	1,030	47
Oklahoma	16	143	342	131	271	291	659	194	853	10
Texas	57	686	1,959	584	1,242	1,679	3,811	1,876	5,687	153
Mountain	34	346	924	311	657	810	1,792	676	2,468	92
Pacific	445	4,717	14,620	4,046	8,246	11,910	25,173	10,187	35,380	1,501
Washington	42	542	1,554	429	871	1,173	2,180	1,402	3,582	125
Oregon	24	631	2,131	569	1,157	1,840	3,302	1,408	4,710	11
California	379	3,544	10,935	3,048	6,218	8,897	19,691	7,377	27,068	1,365

^a Withheld to avoid disclosing figures for individual companies.

¹ For each producing State not shown separately in the table (see GENERAL EXPLANATIONS "Disclosure of Data for Individual Companies"), there are shown below the number of establishments and, in parentheses, the number of employees for States represented by three or more companies, when possible.

Valves and fittings (except plumbers): *New England*, Maine, 1; Rhode Island, 8; *West North Central*, Minnesota, 5 (183); Missouri, 6 (871); South Dakota, 1; Nebraska, 1; Kansas, 1; *South Atlantic*, Maryland, 3 (30); West Virginia, 1; Georgia, 2; *East South Central*, Kentucky, 4; Tennessee, 1; *West South Central*, Louisiana, 1; Oklahoma, 6; *West*, Arizona, 1; Colorado, 1; Washington, 2; Oregon, 4 (32).

Fabricated pipe and fittings: *New England*, Massachusetts, 7; Rhode Island, 1; Connecticut, 6 (266); *Middle Atlantic*, New York, 20 (296); New Jersey, 14 (1,175); Pennsylvania, 30 (1,855); *East North Central*, Ohio, 20 (1,677); Indiana, 2; Illinois, 17 (1,380); Michigan, 20 (458); Wisconsin, 6; *West North Central*, Minnesota, 3; Iowa, 1; Missouri, 7 (594); Kansas, 1; *South*, Delaware, 1; Maryland, 5 (89); Virginia, 1; West Virginia, 2; Florida, 2; Mississippi, 1; Oklahoma, 2; Texas, 7 (543); *Pacific*, Washington, 3 (45); Oregon, 4 (63); California, 29 (787).

Ball and roller bearings: *New England*, New Hampshire, 3; Massachusetts, 1; *Middle Atlantic*, New York, 14 (3,172); New Jersey, 6 (3,901); *East North Central*, Ohio, 9 (12,977); Indiana, 4 (1,407); Michigan, 8 (3,158); *South*, Maryland, 1; South Carolina, 1; Oklahoma, 3; *West*, Colorado, 1; California, 4.

Machine shops: *New England*, Maine, 5 (40); New Hampshire, 11 (98); Vermont, 6 (91); *West North Central*, Iowa, 27 (765); South Dakota, 1; Nebraska, 6; Kansas, 26 (387); *South*, Delaware, 5 (104); District of Columbia, 1; Virginia, 7 (143); West Virginia, 12 (114); South Carolina, 1; Georgia, 7 (25); Florida, 7 (108); Kentucky, 11 (394); Tennessee, 13 (370); Mississippi, 3 (22); Arkansas, 4; Louisiana, 7 (148); *Mountain*, Montana, 1; Idaho, 1; Wyoming, 3 (9); Colorado, 22 (214); Arizona, 4 (42); Utah, 1; Nevada, 2.

TABLE 3.—DETAILED STATISTICS FOR THE UNITED STATES: 1947
(Money figures in thousands of dollars. For explanation of line captions see GENERAL EXPLANATIONS)

ITEM	Industry				ITEM	Industry			
	Valves and fittings (except plumbers)	Fabricated pipe and fittings	Ball and roller bearings	Machine shops		Valves and fittings (except plumbers)	Fabricated pipe and fittings	Ball and roller bearings	Machine shops
ALL ESTABLISHMENTS					ESTABLISHMENTS REPORTING DETAILED STATISTICS—Continued				
Number of establishments	453	212	94	3,112	Cost of materials, fuel, electricity, and contract work	\$242,496	\$57,190	\$106,524	\$125,581
All employees:					Materials, parts, containers, and supplies	227,707	54,971	99,024	115,098
Number (average for the year)	80,075	10,568	52,174	58,160	Fuels, total	6,688	532	2,285	1,725
Salaries and wages, total	\$238,951	\$33,362	\$153,333	\$161,972	Bituminous coal	1,686	135	577	350
Production and related workers:					Anthracite	225	7		51
Number (average for the year)	65,855	8,273	45,075	48,638	Coke	1,954	12		263
Man-hours, total	132,765	16,781	91,323	100,024	Fuel oils	1,778	174	739	518
Wages, total	\$184,638	\$23,172	\$128,711	\$126,009	Gas	966	187	773	419
Value added by manufacture	\$393,860	\$58,786	\$259,060	\$271,870	Other fuels	79	17	196	121
ESTABLISHMENTS REPORTING DETAILED STATISTICS					Purchased electric energy	4,193	720	3,593	2,803
Number of establishments	378	212	94	1,474	Contract and commission work	3,908	967	1,622	5,055
All employees:					Value of inventories:				
Number (average for the year)	79,776	10,568	52,174	50,464	Beginning of year, total	\$124,819	\$14,098	\$75,893	\$51,377
Salaries and wages, total	\$238,128	\$33,362	\$153,333	\$143,949	Finished products	32,779	3,748	19,096	17,771
Production and related workers:					Materials, supplies, and work in process	92,040	10,350	56,797	33,605
Number (average for the year)	65,563	8,273	45,075	41,100	End of year, total	143,214	19,009	86,953	60,874
Man-hours, total	132,184	16,781	91,323	84,968	Finished products	45,020	5,323	27,945	25,058
Wages, total	\$183,852	\$23,172	\$128,711	\$108,954	Materials, supplies, and work in process	98,194	13,686	59,008	35,816
Value added by manufacture	\$392,795	\$58,786	\$259,060	\$239,889	Expenditures for plant and equipment:				
Number of employees for pay period ended nearest Oct. 15:					New plant and equipment	\$20,877	\$4,084	\$21,872	\$12,850
All employees	77,245	10,849	51,346	47,170	Construction and major alteration of fixed plants	3,936	1,731	4,595	3,106
Male	66,301	10,047	38,661	38,555	Buildings	3,594	1,705	4,048	2,801
Female	10,884	802	12,685	8,615	Other construction	342	26	547	805
Production and related workers	63,191	8,465	44,285	38,245	Machinery and equipment	16,941	2,353	17,277	9,744
Male	57,099	8,269	33,911	32,737	Production machinery and equipment	15,481	1,999	14,974	8,540
Female	6,092	196	10,374	5,508	Other machinery and equipment	1,460	354	2,303	1,201
Force-account construction workers	11	11			Used plant and equipment, and land	2,136	776	3,491	2,080
Administrative, supervisory, sales, and all other	14,043	2,373	7,061	8,925	Number of highway-type motor vehicles owned or leased:				
Male	9,254	1,767	4,730	5,818	Trucks	343	221	96	836
Female	4,789	606	2,331	3,107	By manufacturer's rated capacity:				
All employees, number by month:					Under 1½ tons	98	70	29	477
January	82,548	9,832	52,060	55,144	1½ tons	126	66	24	264
February	82,342	10,143	52,722	55,252	Over 1½ tons and less than 3½ tons	80	42	17	84
March	83,382	10,342	52,283	54,757	3½ tons and less than 5 tons	19	11	6	21
April	82,926	10,526	53,446	51,558	5 tons and over	20	32	20	10
May	81,524	10,677	53,646	49,874	By body type:				
June	80,076	10,637	51,922	48,156	Van	8	9	9	26
July	77,098	10,388	51,164	47,382	Stake or platform	182	127	37	320
August	77,377	10,696	51,555	47,364	Panel or light delivery	79	48	26	364
September	76,524	10,780	51,466	47,170	All other trucks	74	36	24	146
October	77,245	10,849	50,882	47,368	Truck tractors	7	32	9	22
November	77,631	10,895	51,051	47,133	Trailers and semitrailers	13	34	14	29
December	78,472	10,992							

CENSUS OF MANUFACTURES: 1947

TABLE 4.—SELECTED GENERAL STATISTICS BY SIZE OF ESTABLISHMENT, FOR THE UNITED STATES: 1947

[Money figures in thousands of dollars. For explanation of line captions see GENERAL EXPLANATIONS. Data which cannot be shown without disclosing information for individual companies have been combined with figures for other groups. A ^a appears in the column where the figure has been omitted and the combined figure is printed in italics]

INDUSTRY AND ITEM	Total, all establish- ments	Establishments with an average of—									
		1-4 em- ployees	5-9 em- ployees	10-19 em- ployees	20-49 em- ployees	50-99 em- ployees	100-249 em- ployees	250-499 em- ployees	500-999 em- ployees	1,000- 2,499 employees	2,500 employees and over
Valves and fittings (except plumbers):	453	74	57	63	72	55	55	40	20	16	^a
Number of establishments.....	80,075	179	393	930	2,233	4,128	8,405	14,190	14,933	<i>\$4,694</i>	(d)
Number of employees (average for the year).....	\$393,880	\$725	\$1,672	\$5,649	\$12,199	\$22,827	\$47,045	\$69,846	\$75,403	<i>\$167,894</i>	(d)
Value added by manufacture.....											
Fabricated pipe and fittings:	212	42	31	43	48	26	12	7	3		
Number of establishments.....	10,568	92	203	568	1,537	1,868	2,004	2,362	1,934		
Number of employees (average for the year).....	\$58,786	\$523	\$1,356	\$3,231	\$9,432	\$11,473	\$10,674	\$12,562	\$9,535		
Value added by manufacture.....											
Ball and roller bearings:	94	5	4	11	17	10	10	9	10	7	5
Number of establishments.....	52,174	12	25	162	475	694	2,612	3,435	7,847	11,914	25,008
Number of employees (average for the year).....	\$259,060	\$26	\$156	\$730	\$2,173	\$3,494	\$12,299	\$10,351	\$36,830	\$65,619	\$121,382
Value added by manufacture.....											
Machine shops:	3,112	1,318	733	548	345	86	50	17	11	4	
Number of establishments.....	58,160	2,002	4,910	7,358	10,098	5,759	7,549	5,041	7,304	6,639	
Number of employees (average for the year).....	\$271,870	\$15,255	\$23,353	\$32,400	\$46,310	\$29,022	\$34,961	\$20,121	\$37,352	\$24,096	
Value added by manufacture.....											

TABLE 5.—VALUE OF PRODUCTS SHIPPED, BY BROAD CLASSES OF PRODUCTS, FOR THE UNITED STATES: 1947

[The first column shows the total value of shipments of the specified industry, divided among: (A) products classified in (primary to) the industry, (B) products classified in other industries (secondary to the specified industry), and (C) miscellaneous receipts. The second column shows the value of shipments of the primary products of the specified industry reported by establishments in other industries. The third column shows the total value of shipments of the primary products of the specified industry by all reporting manufacturers]

[Money figures in thousands of dollars]

VALVES AND FITTINGS (EXCEPT PLUMBERS) INDUSTRY	Shipped by—			FABRICATED PIPE AND FITTINGS INDUSTRY	Shipped by—		
	Valves and fittings (except plumbers') industry	Other industries	All industries		Fabricated pipe and fittings industry	Other industries	All industries
Total shipments by the industry.....	\$637,463			Total shipments by the industry.....	\$115,976		
A. Valves and fittings, except plumbers' fittings.....	503,094	\$55,340	\$559,334	A. Fabricated pipe and fittings.....	91,820	\$18,165	\$109,985
Valves and fittings for piping systems, except plumbing and heating valves.....	404,706	36,851	441,557	B. Secondary products.....	10,851		
Valves for plumbing and heating systems.....	57,282	8,373	65,655	Valves and fittings for piping systems, except plumbing and heating valves.....	8,606		
Other valves and fittings, except plumbers' fittings.....	36,132	7,035	43,167	Other secondary products (industrial machinery, stampings, etc.).....	11,245		
Valves and fittings (except plumbers'), not reported by type.....	5,874	3,081	8,955	C. Miscellaneous receipts.....	4,299		
B. Secondary products.....	111,462			Contract and commission work.....	1,541		
Plumbing fixtures, fittings, and trim.....	11,220			Repair work.....	1,337		
Industrial process instruments.....	5,301			Scrap and salable refuse.....	1,221		
Other secondary products (fabricated pipe, general industrial equipment, machine shop products, etc.).....	94,941			Nonmanufacturing activities.....			
C. Miscellaneous receipts.....	22,007						
Contract and commission work.....	2,562						
Repair work.....	4,834						
Scrap and salable refuse.....	14,123						
Nonmanufacturing activities.....	488						
BALL AND ROLLER BEARINGS INDUSTRY	Shipped by—			MACHINE SHOPS INDUSTRY	Shipped by—		
	Ball and roller bearings industry	Other industries	All industries		Machine shops industry	Other industries	All industries
Total shipments by the industry.....	\$365,584			Total shipments by the industry.....	\$410,264		
A. Ball and roller bearings.....	339,927	\$12,574	\$352,501	A. Machine shop products.....	322,214	\$115,441	\$437,655
B. Secondary products (parts for railroad equipment, bicycle parts, etc.).....	20,068			B. Secondary products (general industrial machinery, mechanical power-transmission equipment, metal-working machinery, etc.).....	32,138		
C. Miscellaneous receipts.....	5,589			C. Miscellaneous receipts.....	55,912		
Scrap and salable refuse.....	4,447			Contract and commission work.....	45,404		
Other receipts.....	1,142			Repair work.....	7,534		
				Scrap and salable refuse.....	1,377		
				Nonmanufacturing activities.....	1,597		

TABLE 6-A.—QUANTITY AND VALUE OF PRODUCTS, TOTALS FOR THE UNITED STATES: 1947 AND 1939

[Money figures in thousands of dollars]

PRODUCT	Unit of measure	1947		1939
		Total shipments and interplant transfers		Total production for sale and interplant transfer (value f.o.b. plant)
		Quantity	Value f.o.b. plant	
Valves and fittings for piping systems, except plumbing and heating valves.			\$441,657	\$170,215
Metal valves:				
Gates, globes, angles, checks, butterfly, lubricated plug, cocks, stop and checks, etc. (except automatic regulating valves):				
Iron (all pressures), including fire hydrants	Short ton	112,491	66,027	
Steel, carbon and alloy (all pressures)	do	52,610	65,407	
Brass and bronze (125 lb. W.S.P. and over)	do	31,128	58,328	
Pop safety valves and relief valves (over 15 lb. W.S.P.):				
Iron			2,344	
Steel, carbon and alloy			3,835	
Brass and bronze			4,707	
Automatic regulating valves:				
Diaphragm actuated			24,645	
Float actuated, including float cages	M units	2,073	11,704	
Other automatic regulating valves			17,312	
Compressed gas cylinder valves	M units	1,481	2,543	
Metal fittings and unions (except compression fittings, flared fittings, and bell and spigot pressure and soil pipe fittings):				
Gray-iron fittings, flanges, and flange unions	Short ton	113,352	28,318	
Malleable iron fittings and flanges	do	96,301	45,650	
Malleable iron unions and union fittings	do	24,526	20,505	
Cast and forged carbon and alloy steel fittings, flanges and unions	do	59,083	32,007	
Cast and wrought copper and copper-base alloy fittings, flanges and unions	do	21,143	25,012	(1)
Steam traps (over 15 lb. W.S.P.):				
Thermostatic and combination float and thermostatic			2,472	
Mechanical	M units	369	3,777	
Other metal valves and piping specialties for piping systems, including those not reported by type (except plumbing and heating valves)			27,064	
Plumbing and heating valves and specialties, except plumbers' fittings.			65,655	
Gates, globes, angles, checks, butterfly, lubricated plug, cocks, stop and checks, cross, etc.—brass and bronze valves (under 125 lb. W.S.P.):				
Quantity reported	Short ton	13,174	25,380	
Quantity not reported			4,279	
Steam traps (15 lb. W.S.P. and under):				
Radiator traps			1,451	
Other steam traps (15 lb. W.S.P. and under)			1,423	
Other metal plumbing and heating valves and specialties, including those not reported separately by type			33,122	
Other valves and fittings, except plumbers' fittings (faucets, spigots, etc.)			43,167	
Valves and fittings (except plumbers' fittings), not reported by type			8,955	
Fabricated pipe and fittings			109,991	15,532
Ball and roller bearings.			352,501	104,874
Antifriction bearings, unmounted:				
Ball bearings:				
Annular, including self-aligning			134,548	
Thrust			9,391	
Other ball bearings			4,521	51,222
Roller bearings:				
Cylindrical, including spherical (except thrust)			41,195	
Needle			5,737	
Thrust (all types)			4,274	
Other roller bearings (including taper, other than thrust)			96,363	47,432
Balls, sold separately			15,081	2,799
Rollers, sold separately			2,516	1,011
Other antifriction bearing components (including cages, housing closures, collars, races, etc.)			19,629	2,410
Mounted bearings:				
Ball			10,867	(2)
Roller			7,230	(2)
Ball and roller bearings and components, not reported by kind			1,149	
Flexible metal hose and tubing			13,569	3,183
Metallic packing			8,813	3,108
Other machine shop products, including carburetors, pistons, piston rings, and metal bellows			415,273	n.a.

¹ Detailed data not collected separately in 1939.² Mounted ball bearings are included with unmounted ball bearings for 1939.³ Mounted roller bearings are included with unmounted roller bearings for 1939.

CENSUS OF MANUFACTURES: 1947

TABLE 6-B.—PRODUCTION OF CARBURETORS, PISTONS, AND PISTON RINGS, BY TYPE: 1947

[Thousands of units]

PRODUCT	Total	Automobile, truck, and bus uses (including shipments to other plants of the same company and units produced for incorporation into vehicles at the same plant)	Other uses (including shipments to other plants of the same company but excluding units produced for incorporation into other products at the same plant)
Carburetors, except rebuilt.....	¹ 10,862	8,657	2,205
Pistons (machined):			
Aluminum.....	² 50,407	³ 50,407	(³)
Other (including cast iron, steel, etc.).....	⁴ 16,911	16,396	515
Piston rings:			
Oil type.....	201,401	197,582	3,819
Compression type.....	364,582	350,113	8,469

¹ Of the 10,862,000 carburetors, the value for 9,681,000 carburetors (consisting of 7,476,000 automobile, truck, and bus carburetors and 2,205,000 other carburetors) was \$43,335,000.

² Of the 50,407,000 aluminum pistons, the value for 15,872,000 was \$20,101,000.

³ A negligible number of pistons for other uses are included with those for automobile, truck, and bus uses to avoid disclosing figures for individual companies.

⁴ Of the 16,912,000 pistons of other than aluminum, the value for 5,047,000 (consisting of 4,532,000 automobile, truck, and bus pistons and 515,000 other pistons) was \$7,983,000.

TABLE 7.—SELECTED MATERIALS CONSUMED, BY KIND: 1947

[The table below summarizes the consumption of selected metal shapes by manufacturers during 1947. For each shape, manufacturing establishments were required to report consumption, in quantity and cost, provided that such usage during 1947 exceeded the following amounts: for iron castings, steel castings, each of six carbon steel shapes—50 short tons; for alloy steel bars and all other alloy steel—25 short tons; for stainless steel, brass and copper wire mill shapes, copper and brass castings, aluminum mill shapes and aluminum castings—10 short tons]

[Money figures in thousands of dollars]

(Money figures in thousands of dollars)

METAL SHAPE	VALVES AND FITTINGS (EXCEPT PLUMBERS') INDUSTRY			BALL AND ROLLER BEARINGS INDUSTRY		
	Establishments consuming more than specified quantities					
	Number	Short tons	Cost	Number	Short tons	Cost
Iron castings, rough and semifinished ¹	97	123,677	\$19,286	11	8,142	\$1,666
Steel castings, rough and semifinished ¹	34	26,731	10,043	6	6,714	2,843
Steel mill shapes and forms.....	n.a.	88,615	12,489	n.a.	309,540	49,663
Carbon steel:						
Bars and bar shapes.....	33	45,195	4,172	24	47,601	7,193
Sheet and strip.....	18	5,078	515	38	48,187	5,393
Structural shapes.....	5	1,099	105	(²)	(³)	(³)
Plates.....	9	7,254	653			
Wire.....	(²)					
All other mill shapes and forms.....	11	21,007	2,954	11	15,215	2,144
Alloy steel, except stainless:				13	5,180	676
Bars and bar shapes.....	9	2,335	312	35	81,767	13,045
All other mill shapes and forms.....	(²)	2,532	338	30	111,166	20,953
Stainless steel.....	45	3,515	3,440	11	334	259
Copper and copper-base alloy:						
Brass and wire mill shapes and forms.....	94	56,814	27,396	10	817	484
Castings, rough and semifinished ¹	90	21,245	15,460	14	1,642	1,864
Aluminum:						
Aluminum mill shapes.....	9	1,213	941			
Castings, rough and semifinished ¹	15	1,572	1,472	(²)	(⁴)	(⁴)

¹ Withheld to avoid disclosing figures for individual companies.

n.a.—Not available.

² Does not include castings produced and consumed in the same establishment.

³ Less than 5 establishments.

⁴ Combined with all other carbon steel mill shapes and forms to avoid disclosing figures for individual companies.

TABLE 8.—NUMBER OF ESTABLISHMENTS PERFORMING SELECTED METALWORKING OPERATIONS: 1947

[The figures in the table represent the number of establishments maintaining the metalworking operation specified, according to the usual number of production workers employed in the operation during 1947]

METALWORKING OPERATION	VALVES AND FITTINGS (EXCEPT PLUMBERS') INDUSTRY						BALL AND ROLLER BEARINGS INDUSTRY					
	Number of establishments performing selected metalworking operations											
	Total	Distribution by number of production workers in the operation					Total	Distribution by number of production workers in the operation				
		1-4	5-19	20-49	50-99	100 and over		1-4	5-19	20-49	50-99	100 and over
Foundry.....	126	13	29	27	25	32	4		1	1		
Die casting.....	6	4	2				1	1				
Forging—presses, hammers, or upsetters.....	22	9	4	3	2	4	10	3	3	3		1
Electroplating.....	36	20	11	3	1	1	7	4	1	2		
Galvanizing and other hot dip coating.....	27	12	10	4	1		2	2				
Heat treating or annealing of metals.....	56	39	12	4			58	22	15	15	2	4
Automatic screw-machine department.....	100	48	28	12	7	5	51	15	12	13	3	8
Machine shop.....	336	55	105	66	60	50	72	8	23	16	10	15
Tool and die room.....	131	51	49	22	6	3	33	8	10	5	3	7
Pattern shop.....	114	68	35	9	1	1	4	4				
Plate or structural fabrication.....	17	5	3	3	4	2	1	1				
Stamping, blanking, forming, or drawing.....	58	35	14	4	4	1	46	12	13	8	8	5

NOTE: In the Valves and Fittings, Except Plumbers', industry, 87 establishments did not answer this inquiry. Of these, 77 had fewer than 20 employees; 9 had between 20 and 99 employees; and 1 had 100 or more employees. In the Ball and Roller Bearings industry, 7 establishments did not answer this inquiry. Of these, 3 had fewer than 20 employees; 3 had between 20 and 99 employees; and 1 had 100 or more employees.

Major Group 36.—ELECTRICAL MACHINERY

This major group includes establishments engaged in manufacturing machinery, apparatus, and supplies for the generation, storage, transmission, transformation, and utilization of electrical energy. The manufacture of certain types of small electrical

household appliances is included in this group, but machinery and equipment as well as other types of electrical appliances, powered by built-in or detachable electric motors are classified in Major Group 35.

GENERAL STATISTICS FOR THE UNITED STATES: 1947 AND EARLIER CENSUS YEARS

[Money figures in thousands of dollars. For explanation of column captions see GENERAL EXPLANATIONS]

CENSUS YEAR	Number of establishments	All employees ¹		Production workers		Value added by manufacture ²
		Number (average for the year)	Wages and salaries, total	Number (average for the year)	Wages, total	
1947.....	3,973	801,359	\$2,271,039	639,147	\$1,647,401	\$3,894,115
1939 ³	1,979	n.a.	n.a.	247,930	323,388	941,469
1937.....	1,597	374,290	559,482	308,003	407,961	1,102,133
1935.....	1,589	275,343	347,533	224,437	240,952	685,716
1933 ⁴	1,365	202,129	211,777	163,736	145,404	404,199
1931.....	1,596	n.a.	n.a.	216,506	239,634	762,626
1929.....	1,861	421,283	649,498	343,138	474,203	1,389,424
1927.....	1,837	322,397	509,350	255,782	356,415	1,040,374
1925 ⁵	1,807	308,592	462,975	251,188	337,079	939,520
1923.....	1,782	331,505	473,751	255,383	330,425	806,436
1921.....	1,487	239,944	338,863	179,142	216,016	547,071
1919.....	1,570	305,222	379,020	241,095	272,152	671,678
1914.....	1,048	155,699	117,868	127,469	80,148	200,510
1909.....	1,027	111,087	73,360	92,455	52,222	121,369
1904 ⁶	798	75,019	45,283	63,863	33,525	80,048
1899.....	502	48,491	25,999	43,280	21,188	44,395

n.a.—Not available.

¹ The figures for 1947 and 1939 include data for employees of manufacturing establishments who were engaged in distribution and construction work. The extent to which data for such employees are included in the figures for earlier years is not known. See GENERAL EXPLANATIONS—Manufacturing employees—Classifications used.

² Value of products less cost of materials, supplies, fuel, electricity, and contract work. For 1899–1933, cost of contract work was not subtracted from value of products in calculating value added by manufacture. See GENERAL EXPLANATIONS—Value added by manufacture.

³ The figures for 1947 and 1939, but not for earlier years, exclude data for establishments primarily engaged in manufacture of vacuum cleaners, turbo-generators and water-wheel generator sets, dictating machines, and electric industrial furnaces and ovens. Value added by manufacture for 1939 on a basis comparable with earlier years was \$1,000 million.

⁴ The figures for 1933 and earlier years include data for establishments primarily engaged in manufacture of certain types of beauty and barber-shop equipment classified for later years in the "Miscellaneous manufactures" industries.

⁵ The figures for 1925 and earlier years include data for establishments primarily engaged in manufacture of certain types of mechanical refrigerators, classified for later years in the "Machinery (except electrical)" industries.

⁶ The figures for 1899 and 1904 include data for establishments primarily engaged in manufacture of signs and advertising novelties, classified for later years in the "Miscellaneous manufactures" industries.

ELECTRICAL INDUSTRIAL APPARATUS

This report shows the 1947 Census of Manufactures statistics for establishments primarily engaged in the production of wiring devices and supplies; carbon and graphite products for use in the electrical industry; instruments for indicating, measuring, and recording electrical quantities and characteristics; motors, generators, and motor-generator sets; power, distribution, and specialty transformers; switchgear, switchboard apparatus and industrial controls; electrical welding apparatus; and other electrical equipment for industrial use. These establishments have been classified in eight industries described separately below.

Wiring Devices and Supplies (*Standard Industrial Classification No. 3611.*)—This industry comprises establishments primarily engaged in manufacturing wiring devices (attachment plugs and caps, convenience outlets, lamp sockets and receptacles, and snap switches); wiring supplies (pole-line hardware, conductor connectors, overhead trolley-line material, and rail bonds for both propulsion and signal circuits); electrical insulators and insulation materials, except porcelain insulators (Industry 3264) and glass insulators (Industry 3229); conduits and fittings; and lightning arresters. Establishments primarily engaged in manufacturing electric lighting fixtures are classified in Industry 3471. Establishments primarily engaged in manufacturing mica insulators are classified in the Nonmetallic Mineral Products, N.E.C., Industry.

Of the total value of \$376 million of wiring devices and supplies, 14 percent was shipped by establishments classified in other industries. Establishments classified in the Wiring Device and Supplies Industry shipped \$322 million of wiring devices and supplies and \$51 million of other products such as incandescent lighting fixtures and portable lamps, fluorescent lighting equipment, switchgear and switchboard apparatus, fuses and fuse equipment, insulated wire and cable, etc.

Carbon and Graphite Products (*Full Standard Industrial Classification title and number: Carbon and Graphite Products for Use in the Electrical Industry, 3612.*)—This industry comprises establishments primarily engaged in manufacturing lighting carbons; carbon, graphite, and metal-graphite brushes and brush stock; carbon or graphite electrodes for thermal and electrolytic uses; and other carbon, graphite, and metal-graphite products. Although the Standard Industrial Classification title indicates that this industry covers only carbon and graphite products for use in the electrical industry, the 1947 census also includes in this industry carbon and graphite products for other uses since they are produced by the same establishments producing carbon and graphite products for use in the electrical industry.

Electrical Measuring Instruments (*Full Standard Industrial Classification title and number: Instruments for Indicating, Measuring, and Recording Electrical Quantities and Characteristics, Industry 3613.*)—This industry comprises establishments primarily engaged in manufacturing pocket, portable, panelboard, and graphic recording instruments for measuring electricity, such as volt meters, ammeters, watt

meters, watt-hour meters, demand meters, and other meters and indicating instruments. This industry also includes establishments primarily engaged in manufacturing meter transformers, and analyzers for testing the electrical characteristics of internal-combustion engines, radio apparatus, etc.

Of the total value of \$157 million of electrical measuring instruments, 20 percent was shipped by establishments classified in other industries. Establishments classified in the Electrical Measuring Instruments Industry shipped \$127 million of electrical measuring instruments and \$24 million of other products such as switchgear and switchboard apparatus, industrial process instruments (other than electrical measuring), exposure meters, etc.

Motors and Generators (*Part of Standard Industrial Classification Nos. 3614 and 3641.*)—This industry comprises establishments primarily engaged in manufacturing electric motors and generators (other than automotive starting motors and battery charging generators); motor-generator sets; and gasoline and Diesel engine-driven generator sets. Establishments primarily engaged in manufacturing automotive starting motors and battery charging generators are classified in Industry 3641. According to the Standard Industrial Classification, turbo-generators powered by steam or water power are classified in this industry. However, the 1947 census includes these commodities in Industry 3511, since they are usually produced by establishments engaged in manufacturing steam turbines rather than by those manufacturing generators. According to the Standard Industrial Classification, electrical equipment for railway locomotives and cars; and motors, generators, and control equipment for gasoline-electric or oil-electric busses and trucks, including storage battery trucks, are classified in Industry 3641, Engine Electrical Equipment. However, the 1947 census includes all such equipment in this industry since it is produced principally by companies primarily engaged in the production of motors, generators, and motor-generator sets. The reports for 1939 have been retabulated to reflect these changes as well as to separate the producers of motors, generators, and motor-generator sets from the other establishments classified in the broader 1939 industry "Generating, Distribution, and Industrial Apparatus, and Apparatus for Incorporation in Manufactured Products, Not Elsewhere Classified."

The commodity statistics for motors, generators, and motor-generator sets are shown in tables 6-A-6-E. In table 6-A, statistics are shown only for the value of shipments and interplant transfers of motors, generators, and motor-generator sets. Data for motors, generators, and motor-generator sets produced for incorporation in the same plant into other products such as vacuum cleaners, electrical appliances, etc., are not included.

Table 6-B presents quantity and value data only for commercial shipments of motors, generators, and motor-generator sets. Data for motors, generators, and motor-generator sets transferred to other establishments of the same company and those produced for incorporation in the same plant into other products such as vacuum cleaners, electrical appliances, etc., are not included.

Table 6-C presents data for the total production of fractional horsepower motors, including those made by companies for incorporation into their end products such as vacuum cleaners, refrigerators, and other electrical equipment. Data for motors transferred to other establishments of the same company and those incorporated into products produced in the same establishment are combined in this table. For motors produced and incorporated into final products made in the same establishment, the quantities represent production during 1947. For those destined for transfer to other establishments of the same company or for sale to other companies, the measure used was shipments.

For integral horsepower motors and generators, data were obtained only in part for those made by companies for incorporation into end products, such as motor-generator sets, gear motors, etc., made in the same establishment. Such data, therefore, are not shown in this report. Complete data, however, were obtained for motors and generators transferred to other establishments of the same company. These latter data are shown separately in table 6-D.

In table 6-E comparative data between 1939 and 1947 are presented on the number of motors and generators, by broad groups. These data include transfers to other establishments of the same company, as well as commercial shipments, but exclude motors and generators produced by establishments for incorporation into other products in the same establishment.

Establishments classified in the motors and generators industry shipped \$787 million of motors, generators, and motor-generator sets and \$193 million of other products such as electric fans; grinding and polishing machines; industrial pumps; blowers, exhaust, and ventilating fans; switchgear and switchboard apparatus, etc.

Transformers (*Full Standard Industrial Classification title and number: Power and Distribution Transformers, Industry 3615.*)—This industry comprises establishments primarily engaged in manufacturing power, distribution, and specialty transformers. Establishments primarily engaged in manufacturing radio-frequency or voice-frequency transformers, coils, or chokes are classified in Industry 3661.

In 1939, establishments producing transformers were included in the industry entitled "Generating, Distribution, and Industrial Apparatus, and Apparatus for Incorporation in Manufactured Products, Not Elsewhere Classified." The reports for 1939 were retabulated in order to supply 1939 statistics comparable with 1947. Data for earlier years, however, are not available.

Establishments classified in the Power and Distribution Transformers Industry shipped \$298 million of power, distribution, and specialty transformers, and \$51 million of other products such as electrical measuring instruments, electronic type

components for communications and industrial electronic controls, insulated wire and cable, etc.

Electrical Control Apparatus (*Full Standard Industrial Classification title and number: Switchgear, Switchboard Apparatus, and Industrial Controls, Industry 3616.*)—This industry comprises establishments primarily engaged in manufacturing switchgear, switchboard apparatus, and industrial electrical controls. Important products of this industry include power switches, circuit breakers, contactors, and similar switchgear for general industrial application; switchboards and cubicles, control and metering panels; power fuse mountings, and similar switchboard apparatus and supplies; and industrial controls such as motor starters and controllers, electromagnetic brakes, and electronic inspection and gauging apparatus and positioning controls.

In 1939, establishments producing switchgear, switchboard apparatus, and industrial controls were included in the industry entitled "Generating, Distribution, and Industrial Apparatus, and Apparatus for Incorporation in Manufactured Products, Not Elsewhere Classified." The reports for 1939 were retabulated in order to supply 1939 statistics comparable with 1947. Data for earlier years, however, are not available.

Electrical Welding Apparatus (*Standard Industrial Classification No. 3617.*)—This industry comprises establishments primarily engaged in manufacturing electrical welding apparatus, electrode holders, and other welding apparatus. Establishments primarily engaged in manufacturing gas welding apparatus are classified in Industry 3542.

In 1939, establishments producing electrical welding apparatus were included in the industry entitled "Generating, Distribution, and Industrial Apparatus, and Apparatus for Incorporation in Manufactured Products, Not Elsewhere Classified." The reports for 1939 have been retabulated in order to supply 1939 statistics comparable with 1947. Data for earlier years, however, are not available.

Electrical Industrial Apparatus, N. E. C. (*Full Standard Industrial Classification title and number: Electrical Equipment for Industrial Use, Not Elsewhere Classified, Industry 3619.*)—This industry comprises establishments primarily engaged in manufacturing industrial and commercial electrical apparatus and appliances, not elsewhere classified, including electric heating units for furnaces and ovens.

In 1939, establishments producing the commodities classified in this industry, except for soldering irons, were included in the industry entitled "Generating, Distribution, and Industrial Apparatus, and Apparatus for Incorporation in Manufactured Products, Not Elsewhere Classified." Establishments producing electric soldering irons were classified in the industry entitled "Electrical Appliances." The reports for 1939 have been retabulated in order to supply 1939 statistics comparable with 1947. Data for earlier years, however, are not available.

ELECTRICAL INDUSTRIAL APPARATUS

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TABLE 1.—GENERAL STATISTICS FOR THE UNITED STATES: 1947 AND EARLIER CENSUS YEARS

(Money figures in thousands of dollars. For explanation of column captions see GENERAL EXPLANATIONS)

INDUSTRY AND CENSUS YEAR	Number of establishments	All employees		Production and related workers		Value added by manufacture ¹	Cost of materials, fuel, electricity, and contract work	Value of products shipped ²
		Number (average for the year)	Salaries and wages, total	Number (average for the year)	Wages, total			
Wiring devices and supplies:								
1947	342	38,367	\$102,322	32,452	\$77,451	\$213,596	\$164,503	\$378,099
1939 ³	141	n.a.	n.a.	14,024	16,358	47,951	43,428	91,379
1937 ⁴	124	n.a.	n.a.	17,301	19,884	48,485	46,906	95,391
Carbon and graphite products:								
1947	44	7,818	22,028	6,426	16,504	40,218	28,527	68,745
1939	31	4,053	6,675	3,189	4,484	11,694	6,682	18,376
1937 ⁴	30	n.a.	n.a.	4,098	5,776	14,315	9,075	23,390
Electrical measuring instruments:								
1947	154	20,926	60,661	16,086	42,326	103,946	49,434	153,380
1939	59	9,318	15,223	6,876	9,881	29,693	12,104	41,797
1937 ⁴	33	n.a.	n.a.	6,835	10,102	30,159	10,257	40,416
Motors and generators:								
1947	256	127,012	374,135	101,852	282,252	569,745	437,680	1,007,186
1939 ⁵	132	n.a.	n.a.	44,423	67,376	159,954	104,242	264,196
Transformers:								
1947	144	36,635	107,978	28,160	78,525	195,102	162,085	356,968
1939 ⁵	47	n.a.	n.a.	9,260	14,064	38,898	32,711	71,609
Electrical control apparatus:								
1947	324	72,330	215,974	54,589	148,360	395,175	233,108	628,283
1939 ⁵	217	n.a.	n.a.	14,747	20,345	71,830	39,477	111,307
Electrical welding apparatus:								
1947	108	7,265	29,151	5,139	17,709	57,310	46,402	103,712
1939 ⁵	47	n.a.	n.a.	1,653	2,482	10,313	10,339	20,652
Electrical industrial apparatus, n.e.c.:								
1947	195	10,999	28,612	8,871	20,325	41,306	33,515	74,821
1939 ⁵	39	n.a.	n.a.	907	1,181	3,669	2,555	6,224

n.a.—Not available.

¹ Value of products less cost of materials, supplies, fuel, electricity, and contract work. See GENERAL EXPLANATIONS—Value added by manufacture. For "Motors and generators" and "Transformers," see GENERAL EXPLANATIONS—Method of calculating value added by manufacture for selected industries in 1947.² For 1947, value of products shipped; for prior years, value of products made. See GENERAL EXPLANATIONS—Value of products shipped.³ The returns for 1939, but not for 1937, have been retabulated to provide figures comparable with those for 1947. Value added for 1939, before retabulation and on a basis comparable with 1937, was \$49.8 million.⁴ "Wiring devices and supplies," "Carbon and graphite products," and "Electrical measuring instruments" were formerly part of the discontinued industry "Electrical machinery, apparatus, and supplies." Separate figures prior to 1937 are, therefore, not available.⁵ The returns for 1939 have been retabulated to provide figures comparable with those for 1947. No comparable figures are available for prior years.

TABLE 2.—GENERAL STATISTICS BY DIVISIONS AND STATES: 1947

(Money figures and man-hours in thousands. For explanation of column captions see GENERAL EXPLANATIONS)

INDUSTRY, DIVISION, AND STATE	Number of establishments	All employees		Production and related workers			Value added by manufacture	Cost of materials, fuel, electricity, and contract work	Value of products shipped	Expenditures for new plant and equipment
		Number (average for the year)	Salaries and wages, total	Number (average for the year)	Man-hours, total	Wages, total				
Wiring devices and supplies, total¹	342	38,367	\$102,322	32,452	65,041	\$77,451	\$213,596	\$164,503	\$378,099	\$13,801
Northeast	182	26,250	66,640	22,404	44,681	51,738	135,514	107,372	242,886	8,555
Connecticut	22	7,264	18,456	6,315	12,345	14,971	36,403	24,976	61,379	1,805
New York	67	7,804	21,421	6,353	13,360	15,425	42,798	29,219	72,015	2,691
Pennsylvania	34	4,255	10,818	3,795	7,115	8,901	27,239	29,765	57,004	1,812
East North Central	90	7,873	24,459	6,492	13,144	17,505	51,967	38,273	88,240	3,542
Ohio	23	1,902	5,441	1,561	3,177	4,118	11,361	8,037	19,398	616
Indiana	8	542	1,357	496	933	1,149	3,027	2,088	5,115	(d)
Illinois	46	5,079	16,743	4,137	8,408	11,558	36,024	24,668	60,692	2,177
West North Central	23	1,601	4,015	1,258	2,706	2,524	9,602	6,906	16,508	532
Missouri	12	1,119	2,929	852	1,749	1,709	7,421	4,355	11,776	324
South	18	1,295	3,292	1,138	2,256	2,770	9,032	9,726	18,758	511
West	29	1,348	3,916	1,160	2,254	2,914	7,481	4,226	11,707	661
Carbon and graphite products, total¹	44	7,818	22,028	6,426	12,856	16,504	40,218	28,527	68,745	1,641
New York	11	2,279	7,019	1,873	3,814	5,381	11,897	10,154	22,051	656
New Jersey	4	137	362	104	224	215	428	452	880	7
Electrical measuring instruments, total¹	154	20,926	60,661	16,086	32,575	42,326	103,946	49,434	153,380	4,342
Northeast	77	13,548	40,464	10,198	20,573	28,060	70,544	29,239	99,783	2,540
Connecticut	8	259	622	188	378	375	803	620	1,423	35
New Jersey	25	6,100	19,092	4,622	9,459	13,672	32,640	11,231	43,880	1,460
Pennsylvania	10	900	2,235	667	1,271	1,503	3,065	1,707	4,772	121
East North Central	47	6,646	18,305	5,334	10,889	13,033	29,740	18,159	47,899	1,638
Ohio	10	1,429	3,264	1,168	2,234	2,336	4,345	3,569	7,914	90
Illinois	25	4,039	11,542	3,218	6,674	8,381	18,452	10,395	28,847	1,271
West North Central	6	202	324	158	325	224	564	267	831	58
South and West	24	530	1,628	396	789	1,009	3,098	1,769	4,867	106
California	16	267	923	184	381	563	1,748	1,340	3,088	83

See footnotes at end of table.

TABLE 2.—GENERAL STATISTICS BY DIVISIONS AND STATES: 1947—Continued

INDUSTRY, DIVISION, AND STATE	Number of establishments	All employees		Production and related workers			Value added by manufacture	Cost of materials, fuel, electricity, and contract work	Value of products shipped	Expenditures for new plant and equipment
		Number (average for the year)	Salaries and wages, total	Number (average for the year)	Man-hours, total	Wages, total				
Motors and generators, total ¹	256	127,012	\$374,135	101,852	208,063	\$282,252	\$569,745	\$437,680	\$1,007,186	\$36,666
New England.....	21	9,281	26,253	7,348	14,957	19,791	42,189	31,168	73,357	2,834
Middle Atlantic.....	45	41,843	134,610	31,810	65,807	98,483	202,504	167,706	370,360	14,726
New York.....	15	13,890	41,391	10,167	20,768	28,157	54,486	50,742	105,228	8,143
East North Central.....	124	61,168	171,661	50,384	101,902	132,271	263,031	191,144	464,201	15,385
Ohio.....	51	34,888	100,895	29,326	57,683	78,801	156,731	114,037	270,768	9,010
Michigan.....	14	4,051	9,117	3,744	7,409	7,820	17,067	11,235	28,328	594
Wisconsin.....	19	8,810	24,603	6,606	13,967	18,150	34,351	22,879	57,230	2,431
West North Central.....	30	10,808	30,106	9,097	18,612	22,998	44,860	30,317	74,912	2,584
Missouri.....	14	7,641	20,775	6,475	12,973	16,154	31,494	18,290	49,519	1,717
South.....	11	1,452	3,971	1,319	2,827	3,164	5,480	8,448	13,028	269
Pacific.....	25	2,460	7,534	1,804	3,958	5,545	11,621	8,807	20,428	868
Transformers, total ¹	144	36,635	107,978	28,160	58,568	78,525	195,102	162,085	356,968	13,479
Northeast.....	65	24,093	73,952	17,972	37,753	52,604	136,234	102,330	238,564	8,960
Connecticut.....	7	694	1,780	587	1,109	1,292	2,782	2,507	5,289	311
New York.....	21	1,969	4,578	1,087	3,411	3,577	7,534	6,300	13,834	185
Pennsylvania.....	10	10,224	33,872	7,672	16,129	24,537	66,443	46,631	112,074	2,019
Other Divisions.....	79	12,542	34,026	10,188	20,815	25,921	58,868	50,755	118,404	4,519
Ohio.....	11	1,629	4,271	1,357	2,850	3,236	11,190	9,903	21,093	248
Illinois.....	23	3,715	9,134	3,155	6,329	7,055	12,870	14,680	27,556	1,757
Electrical control apparatus, total ¹	324	72,330	215,974	54,589	111,078	148,360	395,175	233,108	628,283	17,300
New England.....	36	5,208	13,567	4,177	9,047	10,019	25,528	15,538	41,066	1,685
Connecticut.....	13	2,362	6,672	1,901	4,244	5,017	13,763	8,616	22,379	561
Middle Atlantic.....	92	29,528	92,793	20,542	41,863	61,238	151,750	110,536	262,286	5,207
New York.....	50	11,832	35,448	8,105	16,230	22,271	30,945	35,357	75,302	1,697
New Jersey.....	20	1,774	4,962	1,281	2,636	3,330	7,848	5,421	13,269	528
Pennsylvania.....	22	15,922	52,883	11,156	22,997	35,637	103,957	69,758	173,715	3,082
East North Central.....	114	23,329	70,745	18,950	37,080	51,875	140,811	64,706	205,517	4,359
Ohio.....	25	4,147	13,588	3,195	6,558	9,108	24,846	14,489	39,335	828
Indiana.....	4	218	634	170	341	354	1,020	447	1,473	19
Illinois.....	53	5,583	16,008	4,514	9,301	11,566	28,728	17,800	46,528	925
Michigan.....	13	3,464	11,429	2,480	4,743	7,100	18,501	10,951	29,542	988
Wisconsin.....	19	9,917	29,186	8,591	17,037	23,657	67,020	21,019	88,639	1,599
West North Central.....	21	9,448	25,405	7,205	14,610	16,001	50,749	23,354	74,103	3,975
South.....	17	2,254	5,713	1,744	3,603	3,772	10,678	8,582	19,200	1,223
Texas.....	4	244	634	195	400	456	1,100	1,005	2,195	(d)
West.....	44	2,553	7,750	1,971	3,975	5,455	15,659	10,392	26,051	851
Washington.....	4	208	630	161	349	455	1,796	943	2,730	84
California.....	35	2,119	6,551	1,611	3,239	4,566	12,954	8,890	21,853	686
Electrical welding apparatus, total ¹	108	7,265	29,151	5,139	10,185	17,709	57,310	46,402	103,712	2,089
New England.....	8	362	1,157	239	505	706	1,366	2,510	3,885	(d)
Middle Atlantic.....	18	528	1,816	332	663	851	3,277	3,721	6,998	86
Pennsylvania.....	5	294	982	178	333	411	1,954	2,278	4,232	52
East North Central.....	57	5,343	22,574	3,874	7,668	14,289	45,531	35,142	80,673	1,375
Ohio.....	15	2,891	13,144	2,079	4,213	8,453	29,306	22,838	52,144	673
Illinois.....	12	684	2,650	442	864	1,340	3,692	2,370	6,062	92
Michigan.....	23	1,298	5,398	938	1,885	3,448	9,782	5,080	14,862	502
West North Central.....	10	403	1,479	262	503	629	3,654	1,074	4,728	(d)
South and West.....	15	620	2,125	432	846	1,234	3,482	3,946	7,428	104
California.....	10	297	1,131	197	394	610	1,821	1,502	3,323	57
Electrical industrial apparatus, n.e.c., total ¹	195	10,999	28,612	8,871	18,170	20,325	41,306	33,515	74,821	2,465
Northeast and North Central.....	163	10,280	26,934	8,311	17,102	19,201	38,744	31,332	70,076	2,379
Connecticut.....	5	221	513	175	373	345	628	501	1,210	45
New York.....	30	1,116	3,041	842	1,693	1,908	6,205	4,545	10,840	220
New Jersey.....	21	2,078	5,793	1,658	3,645	4,430	7,230	6,800	14,090	458
Illinois.....	34	2,572	6,044	2,243	4,360	4,826	8,367	4,368	12,735	422
Michigan.....	8	169	496	126	275	314	759	559	1,318	26
Wisconsin.....	4	146	375	128	263	250	670	641	1,220	17
Minnesota.....	7	288	674	239	510	465	1,110	1,568	2,678	20
South.....	12	338	694	272	491	389	964	1,094	2,058	31
West.....	20	375	984	288	677	645	1,598	1,089	2,687	55
California.....	17	345	902	263	631	576	1,493	1,011	2,504	50

^d Withheld to avoid disclosing figures for individual companies.

¹ For each producing State not shown separately in the table (see GENERAL EXPLANATIONS "Disclosure of Data for Individual Companies"), there are shown below the number of establishments and, in parentheses, the number of employees for States represented by three or more companies, when possible.

Wiring devices and supplies: *Northeast*, Massachusetts, 18 (2,243); *Rhode Island*, 7 (1,812); *New Jersey*, 34 (2,812); *East North Central*, Michigan, 9 (197); *Wisconsin*, 4 (153); *West North Central*, Minnesota, 3 (83); *Iowa*, 5 (90); *Nebraska*, 1; *Kansas*, 2; *South*, West Virginia, 3 (595); *Georgia*, 1; *Florida*, 1; *Kentucky*, 1; *Tennessee*, 1; *Alabama*, 6 (382); *Oklahoma*, 1; *Texas*, 4 (219); *West*, Colorado, 1; *Arizona*, 2; *California*, 26 (1,332).

Carbon and graphite products: *Pennsylvania*, 10 (2,289); *Ohio*, 6 (1,834); *Illinois*, 1; *Michigan*, 1; *Wisconsin*, 4 (91); *Missouri*, 1; *West Virginia*, 1; *Tennessee*, 1; *Alabama*, 1; *California*, 3 (8).

Electrical measuring instruments: *Northeast*, New Hampshire, 3 (319); *Massachusetts*, 5 (5,490); *New York*, 26 (480); *East North Central*, Indiana, 4 (631); *Michigan*, 6; *Wisconsin*, 2; *West North Central*, Minnesota, 1; *Iowa*, 3 (150); *Nebraska*, 2; *South and West*, Florida, 1; *Tennessee*, 1; *Mississippi*, 1; *Texas*, 1; *Wyoming*, 1; *Colorado*, 1; *Oregon*, 2.

Motors and generators: *New England*, New Hampshire, 2; *Massachusetts*, 8 (7,100); *Connecticut*, 11; *Middle Atlantic*, New Jersey, 9 (5,868); *Pennsylvania*, 21 (22,085); *East North Central*, Indiana, 12 (10,254); *Illinois*, 28 (3,156); *West North Central*, Minnesota, 9 (1,915); *Iowa*, 6; *Kansas*, 1; *South*, Maryland, 2; *West Virginia*, 3 (824); *Florida*, 1; *Tennessee*, 2; *Alabama*, 1; *Texas*, 2; *Pacific*, Washington, 1; *California*, 24.

Transformers: *Northeast*, New Hampshire, 2; *Massachusetts*, 7; *New Jersey*, 18 (1,255); *Other Divisions*, Indiana, 7 (2,600); *Michigan*, 8 (950); *Wisconsin*, 6 (1,086); *Minnesota*, 1; *Missouri*, 4 (870); *Oregon*, 2; *California*, 17 (1,560).

Electrical control apparatus: *New England*, New Hampshire, 4; *Massachusetts*, 18 (2,189); *Rhode Island*, 1; *West North Central*, Minnesota, 11 (6,361); *Iowa*, 1; *Missouri*, 9; *South*, Maryland, 4 (736); *North Carolina*, 1; *Georgia*, 4 (863); *Kentucky*, 1; *Alabama*, 1; *Oklahoma*, 2; *West*, Colorado, 1; *Oregon*, 4.

Electrical welding apparatus: *New England*, Massachusetts, 4 (312); *Connecticut*, 4 (50); *Middle Atlantic*, New York, 10 (152); *New Jersey*, 3 (82); *East North Central*, Indiana, 2; *Wisconsin*, 5; *West North Central*, Minnesota, 4 (249); *Missouri*, 2; *South Dakota*, 1; *Nebraska*, 2; *Kansas*, 1; *South and West*, Maryland, 2; *Texas*, 1; *Colorado*, 1; *Oregon*, 1.

Electrical industrial apparatus, n.e.c.: *Northeast and North Central*, Massachusetts, 9 (1,126); *Rhode Island*, 3; *Pennsylvania*, 8 (681); *Ohio*, 13 (554); *Indiana*, 8 (736); *Iowa*, 2; *Missouri*, 7 (360); *Nebraska*, 4 (179); *South*, Delaware, 1; *Maryland*, 4 (26); *West Virginia*, 1; *North Carolina*, 3 (173); *Kentucky*, 1; *Texas*, 2; *West*, Colorado, 1; *Washington*, 2.

TABLE 3.—DETAILED STATISTICS FOR THE UNITED STATES: 1947

[Money figures in thousands of dollars. For explanation of line captions see GENERAL EXPLANATIONS]

ITEM	Industry							
	Wiring devices and supplies	Carbon and graphite products	Electrical measuring instruments	Motors and generators	Transformers	Electrical control apparatus	Electrical welding apparatus	Electrical industrial apparatus, n.e.c.
Number of establishments.....	342	44	154	256	144	324	108	195
All employees:								
Number (average for the year).....	38,367	7,818	20,926	127,012	36,635	72,330	7,265	10,999
Salaries and wages, total.....	\$102,322	\$22,028	\$60,661	\$374,135	\$107,978	\$215,974	\$29,151	\$28,612
Production and related workers:								
Number (average for the year).....	32,452	6,426	16,086	101,852	28,160	54,589	5,139	8,871
Man-hours, total.....	65,041	12,856	32,576	208,063	58,568	111,078	10,185	18,170
Wages, total.....	\$77,451	\$16,504	\$42,326	\$282,252	\$78,525	\$148,360	\$17,709	\$20,325
Value added by manufacture.....	\$213,596	\$40,218	\$103,946	\$569,745	\$195,102	\$395,175	\$57,310	\$41,306
Number of employees for pay period ended nearest Oct. 15:								
All employees.....	38,290	7,511	20,710	128,895	38,018	71,499	7,065	9,839
Male.....	22,299	6,084	12,862	91,031	27,637	49,433	6,178	5,399
Female.....	15,991	1,427	7,848	37,864	10,381	22,066	887	4,440
Production and related workers.....	32,345	6,084	15,886	103,814	29,483	53,606	4,974	7,668
Male.....	18,792	5,107	9,807	74,263	22,118	37,810	4,717	3,973
Female.....	13,553	977	6,079	29,551	7,365	15,796	257	3,695
Force-account construction workers.....	23						12	6
Administrative, supervisory, sales, and all other.....	5,922	1,427	4,824	25,081	8,535	17,893	2,079	2,166
Male.....	3,484	977	3,055	16,768	5,519	11,623	1,449	1,421
Female.....	2,438	450	1,769	8,313	3,016	6,270	630	745
All employees, number by month:								
January.....	38,251	7,960	21,863	124,219	35,591	73,978	7,832	13,028
February.....	39,194	8,083	21,631	124,897	36,033	74,304	7,727	12,910
March.....	38,896	8,106	21,413	125,174	35,597	73,984	7,623	12,952
April.....	39,099	8,100	21,087	125,397	35,095	73,306	7,441	12,606
May.....	38,738	7,215	20,927	126,591	35,236	71,975	7,229	11,518
June.....	38,092	8,016	20,496	127,611	35,826	71,709	6,763	10,849
July.....	37,278	8,065	20,312	127,419	36,355	70,528	6,994	9,326
August.....	37,464	7,986	20,112	127,196	37,005	71,356	7,088	9,410
September.....	37,560	7,803	20,400	127,710	37,818	71,405	7,126	9,659
October.....	38,290	7,511	20,710	128,895	38,018	71,499	7,065	9,839
November.....	38,768	7,482	20,937	129,249	38,426	71,877	7,080	9,844
December.....	38,640	7,456	21,152	129,703	38,505	71,968	7,120	9,898
Cost of materials, fuel, electricity, and contract work.....	\$164,503	\$28,527	\$49,434	\$437,680	\$162,085	\$233,108	\$46,402	\$33,515
Materials, parts, containers, and supplies.....	158,883	21,013	47,014	423,135	158,108	225,550	45,250	32,322
Fuels, total.....	1,859	4,679	315	4,845	1,739	2,055	307	287
Bituminous coal.....	521	682	139	3,176	987	1,080	67	43
Anthracite.....	17	313	8	11	9	22	4	11
Coke.....	78	2,707	63	7	26	1		
Fuel oils.....	678	266	124	835	413	533	92	165
Gas.....	526	703	42	655	227	335	136	65
Other fuels.....	39	8	2	105	96	60	7	3
Purchased electric energy.....	1,505	2,513	680	5,655	1,741	2,230	493	459
Contract and commission work.....	2,256	322	1,425	4,045	497	3,272	352	447
Value of inventories:								
Beginning of year, total.....	\$56,344	\$12,276	\$32,405	\$194,868	\$58,316	\$131,410	\$23,345	\$19,126
Finished products.....	14,868	2,546	3,623	29,805	4,568	19,736	4,912	2,190
Materials, supplies, and work in process.....	41,476	9,730	28,782	165,063	53,748	111,674	18,433	16,936
End of year, total.....	67,545	14,572	36,014	251,080	81,137	145,139	22,875	19,319
Finished products.....	22,653	2,892	6,053	48,233	10,373	26,194	5,529	2,970
Materials, supplies, and work in process.....	44,892	11,680	29,961	202,847	70,764	118,945	17,346	16,349
Expenditures for plant and equipment:								
New plant and equipment.....	\$13,891	\$1,641	\$4,342	\$36,666	\$13,479	\$17,300	\$2,089	\$2,465
Construction and major alteration of fixed plants.....	4,418	259	1,145	8,833	3,168	5,110	507	508
Buildings.....	4,173	208	1,073	7,620	2,925	4,774	469	438
Other construction.....	245	51	72	1,213	243	336	38	70
Machinery and equipment.....	9,383	1,382	3,197	27,833	10,311	12,190	1,582	1,957
Production machinery and equipment.....	8,522	1,272	2,234	24,811	9,298	10,106	1,270	1,772
Other machinery and equipment.....	861	110	963	3,022	1,013	2,084	312	185
Used plant and equipment, and land.....	1,251	1,665	118	5,251	453	5,498	150	482
Number of highway-type motor vehicles owned or leased:								
Trucks.....	161	40	323	339	83	224	51	54
By manufacturer's rated capacity:								
Under 1 1/2 tons.....	52	15	285	113	26	72	28	35
1 1/2 tons.....	66	17	19	102	36	91	16	10
Over 1 1/2 tons and less than 3 1/2 tons.....	25	8	14	75	14	35	4	3
3 1/2 tons and less than 5 tons.....	6		2	25	5	13		6
5 tons and over.....	12		3	24	2	13	3	
By body type:								
Van.....	16		5	13	2	7		2
Stake or platform.....	74	7	23	180	36	124	18	12
Panel or light delivery.....	43	15	289	96	25	75	30	27
All other trucks.....	28	18	6	50	20	18	3	13
Truck tractors.....	8		1	44	19	3	1	1
Trailers and semitrailers.....	8		1	50	46	5	1	2

TABLE 4.—SELECTED GENERAL STATISTICS BY SIZE OF ESTABLISHMENT, FOR THE UNITED STATES: 1947

[Money figures in thousands of dollars. For explanation of line captions see GENERAL EXPLANATIONS. Data which cannot be shown without disclosing information for individual companies have been combined with figures for other groups. A ^d appears in the column where the figure has been omitted and the combined figure is printed in italics]

INDUSTRY AND ITEM	Total, all establish- ments	Establishments with an average of—									
		1-4 em- ployees	5-9 em- ployees	10-19 em- ployees	20-49 em- ployees	50-99 em- ployees	100-249 em- ployees	250-499 em- ployees	500-999 em- ployees	1,000- 2,499 employees	2,500 employees and over
Wiring devices and supplies:											
Number of establishments.....	342	53	43	49	73	43	39	23	12	7	-----
Number of employees (average for the year).....	38,367	117	296	607	2,225	2,941	6,358	7,406	8,109	10,128	-----
Value added by manufacture.....	\$213,596	\$493	\$971	\$2,041	\$11,043	\$15,033	\$34,128	\$46,052	\$49,522	\$53,713	-----
Carbon and graphite products:											
Number of establishments.....	44	9	3	7	4	7	6	2	4	2	-----
Number of employees (average for the year).....	7,818	22	24	89	123	478	950	(^d)	0,133	(^d)	-----
Value added by manufacture.....	\$40,218	\$147	\$127	\$355	\$472	\$2,087	\$5,503	(^d)	\$31,527	(^d)	-----
Electrical measuring instruments:											
Number of establishments.....	154	40	28	18	27	17	11	8	1	2	2
Number of employees (average for the year).....	20,926	80	183	240	871	1,217	1,550	3,091	(^d)	(^d)	12,348
Value added by manufacture.....	\$103,946	\$367	\$912	\$1,205	\$4,402	\$5,466	\$0,293	\$17,965	(^d)	(^d)	\$67,546
Motors and generators:											
Number of establishments.....	256	26	17	23	51	30	32	27	20	17	13
Number of employees (average for the year).....	127,012	64	108	322	1,662	2,136	4,911	9,763	14,343	20,093	64,610
Value added by manufacture.....	\$569,745	\$251	\$468	\$1,203	\$6,514	\$8,758	\$24,605	\$42,642	\$69,409	\$121,071	\$294,824
Transformers:											
Number of establishments.....	144	23	18	18	33	18	12	7	10	3	2
Number of employees (average for the year).....	36,035	62	110	249	1,066	1,244	1,815	2,699	7,500	(^d)	21,890
Value added by manufacture.....	\$195,102	\$266	\$446	\$748	\$4,027	\$4,913	\$7,384	\$10,205	\$43,030	(^d)	\$124,074
Electrical control apparatus:											
Number of establishments.....	324	38	48	39	52	47	51	24	13	6	6
Number of employees (average for the year).....	72,330	102	326	589	1,672	3,346	8,202	8,772	9,830	8,430	30,971
Value added by manufacture.....	\$395,175	\$483	\$1,323	\$3,523	\$9,449	\$17,337	\$43,467	\$47,433	\$49,455	\$45,705	\$177,000
Electrical welding apparatus:											
Number of establishments.....	108	16	13	19	27	16	12	2	2	1	-----
Number of employees (average for the year).....	7,265	36	92	267	890	1,258	1,877	(^d)	2,845	(^d)	-----
Value added by manufacture.....	\$57,310	\$204	\$430	\$1,523	\$5,385	\$8,694	\$13,151	(^d)	\$27,923	(^d)	-----
Electrical industrial apparatus, n.e.c.:											
Number of establishments.....	195	38	35	40	40	19	13	5	5	-----	-----
Number of employees (average for the year).....	10,999	96	254	548	1,150	1,439	2,108	1,836	3,559	-----	-----
Value added by manufacture.....	\$41,306	\$388	\$1,214	\$2,241	\$4,385	\$5,484	\$7,997	\$8,167	\$11,430	-----	-----

TABLE 5.—VALUE OF PRODUCTS SHIPPED, BY BROAD CLASSES OF PRODUCTS, FOR THE UNITED STATES: 1947

[The first column shows the total value of shipments of the specified industry, divided among: (A) products classified in (primary to) the industry, (B) products classified in other industries (secondary to the specified industry), and (C) miscellaneous receipts. The second column shows the value of shipments of the primary products of the specified industry reported by establishments in other industries. The third column shows the total value of shipments of the primary products of the specified industry by all reporting manufacturers]

[Money figures in thousands of dollars]

WIRING DEVICES AND SUPPLIES INDUSTRY	Shipped by—			ELECTRICAL MEASURING INSTRUMENTS INDUSTRY	Shipped by—		
	Wiring devices and supplies industry	Other industries	All industries		Electrical measuring instru- ments industry	Other industries	All industries
Total shipments by the industry.....	\$378,099			Total shipments by the industry.....	\$153,386		
A. Wiring devices and supplies.....	321,564	\$54,089	\$375,653	A. Electrical measuring instruments.....	126,584	\$30,869	\$157,453
Current-carrying wiring devices.....	138,695	15,055	153,750	Electrical integrating instruments.....	61,323	2,327	63,650
Noncurrent-carrying wiring devices and supplies.....	133,676	27,520	161,196	Electrical test equipment.....	37,027	17,778	54,805
Pole-line and transmission hardware.....	47,021	10,686	57,707	Electrical measuring instruments, other than integrating instruments, and electrical test equipment.....	27,228	10,659	37,885
Wiring devices and supplies, not specified by type.....	2,172	828	3,000	Electrical instruments, not specified by kind.....	1,008	105	1,113
B. Secondary products.....	50,988			B. Secondary products.....	24,386		
Incandescent lighting fixtures and portable lamps.....	3,991			Switchgear and switchboard apparatus.....	7,362		
Fluorescent lighting equipment, other than vehicular.....	1,488			Industrial process instruments, other than electrical measuring.....	1,506		
Switchgear and switchboard apparatus.....	4,017			Other secondary products, including exposure meters, electronic components, etc.....	15,518		
Fuses and fuse equipment, under 2,300 volts.....	2,025			C. Miscellaneous receipts.....	2,410		
Insulated wire and cable.....	9,882			Repair work.....	1,014		
Other secondary products including blowers, exhaust, and ventilating fans, electrical control equipment, electric appliances, communication equipment, etc.....	29,585			Other receipts.....	1,396		
C. Miscellaneous receipts.....	5,547						
Scrap and salable refuse.....	2,373						
Other receipts.....	3,174						

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TABLE 5.—VALUE OF PRODUCTS SHIPPED, BY BROAD CLASSES OF PRODUCTS, FOR THE UNITED STATES: 1947
—Continued

CARBON AND GRAPHITE PRODUCTS INDUSTRY	Shipped by—		
	Carbon and graphite products industry	Other industries	All industries
Total shipments by the industry.....	\$68,745		
A. Carbon and graphite products.....	65,329	\$3,275	\$68,604
B. Secondary products.....	3,312		
C. Miscellaneous receipts.....	101		

MOTORS AND GENERATORS INDUSTRY	Shipped by—		
	Motors and generators industry	Other industries	All industries
Total shipments by the industry.....	\$1,007,186		
A. Motors, generators, and motor-generator sets.....	787,339	\$68,238	\$855,577
Shipments to other companies.....	735,024	68,238	803,262
Fractional horsepower motors.....	279,281	30,122	309,403
Integral horsepower motors and generators.....	241,668	17,037	258,705
Prime mover-generator sets, other than steam or hydraulic turbine.....	29,269	4,531	33,790
Motor-generator sets and other rotating equipment.....			37,510
Motors, generators, and control apparatus for land transportation equipment.....	101,143	6,013	69,646
Parts and supplies for motors, generators, and motor-generator sets.....	71,754	8,333	80,087
Motors, generators, and motor-generator sets, not specified by type.....	11,919	2,202	14,121
Interplant transfers.....	52,315		52,315
B. Secondary products.....	193,478		
Electric fans.....	14,032		
Grinding and polishing machines.....	1,475		
Industrial pumps.....	1,935		
Blowers, exhaust, and ventilating fans.....	2,876		
Other secondary products, including turbine-generator sets, switchgear and switchboard apparatus, industrial electrical controls, electrical welding apparatus, etc.....	173,160		
C. Miscellaneous receipts.....	26,369		
Contract and commission work.....	2,855		
Repair work.....	11,501		
Scrap and salable refuse.....	10,029		
Nonmanufacturing activities.....	1,984		

TRANSFORMERS INDUSTRY	Shipped by—		
	Transformers industry	Other industries	All industries
Total shipments by the industry.....	\$356,968		
A. Transformers.....	298,493	\$28,284	\$326,777
Specialty transformers.....	70,625	10,047	80,672
Power and distribution transformers.....	228,532	16,874	205,943
Parts and supplies, power regulators, boosters, and reactors.....			37,463
Power, distribution, and specialty transformers, not specified by kind.....	1,336	1,363	2,699
B. Secondary products.....	50,982		
Electrical measuring instruments.....	6,408		
Electronic type components for communications and industrial electronic controls.....	8,319		
Other secondary products, including insulated wire and cable, electrical porcelain, motors, generators, etc.....	36,255		
C. Miscellaneous receipts.....	7,493		
Repair work.....	1,612		
Scrap and salable refuse.....	1,782		
Other receipts.....	4,099		

ELECTRICAL CONTROL APPARATUS INDUSTRY	Shipped by—		
	Electrical control apparatus industry	Other industries	All industries
Total shipments by the industry.....	\$623,233		
A. Electrical control apparatus.....	558,852	\$66,120	\$624,972
Switchgear and switchboard apparatus.....	327,444	33,544	360,988
Industrial electrical control equipment (except railway and motor vehicle controllers).....	143,662	26,248	169,910
Domestic automatic controls.....	68,949	1,781	70,732
Fuses and fuse equipment, under 2,300 volts.....	16,631	4,067	20,693
Electrical control apparatus, not specified by type.....	2,166	478	2,644
B. Secondary products.....	54,066		
Current-carrying wiring devices.....	6,045		
Noncurrent-carrying wiring devices and supplies.....	4,435		
Other secondary products, including insulated wire and cable, electronic type components, motors and generators, etc.....	43,586		
C. Miscellaneous receipts.....	15,365		
Contract and commission work.....	1,283		
Repair work.....	10,286		
Scrap and salable refuse.....	3,264		
Nonmanufacturing activities.....	532		

ELECTRICAL WELDING APPARATUS INDUSTRY	Shipped by—		
	Electrical welding apparatus industry	Other industries	All industries
Total shipments by the industry.....	\$103,712		
A. Electrical welding apparatus.....	95,702	\$11,914	\$107,616
Arc welding machines, welding parts, components, and accessories.....	26,307	5,803	32,110
Arc welding electrodes.....	41,291	2,696	43,987
Resistance welders, parts, components, accessories, and electrodes.....	26,574	3,300	29,874
Electrical welding apparatus, not specified by type.....	1,530	115	1,645
B. Secondary products (resistance welder controls (electronic and magnetic), motors, transformers, electrical appliances, etc.).....	6,878		
C. Miscellaneous receipts.....	1,132		

ELECTRICAL INDUSTRIAL APPARATUS, N.E.C., INDUSTRY	Shipped by—		
	Electrical industrial apparatus, n.e.c., industry	Other industries	All industries
Total shipments by the industry.....	\$74,821		
A. Industrial electrical equipment, n.e.c.....	61,335	\$54,273	\$115,608
High frequency induction and dielectric heating apparatus.....	4,769	2,860	7,629
Capacitors for industrial use.....	12,345	25,924	38,269
Miscellaneous electrical equipment for industrial use.....	44,221	25,489	69,710
B. Secondary products (electric furnaces and ovens, instruments, transformers, insulated wire and cable, switchgear, electronic components, etc.).....	12,421		
C. Miscellaneous receipts.....	1,065		

TABLE 6-A.—QUANTITY AND VALUE OF PRODUCTS, TOTALS FOR THE UNITED STATES: 1947 AND 1939

[Money figures in thousands of dollars]

PRODUCT	1947		1939	
	Total shipments and interplant transfers		Total production for sale and interplant transfer	
	Quantity	Value f.o.b. plant	Quantity	Value f.o.b. plant
	(M units)		(M units)	
Current-carrying wiring devices		\$153,750		\$39,879
Lamp holders, incandescent type:				
Brass or metal shell, all sizes (excluding outlet box type).....	43,729	6,314	n.a.	9,558
Outlet box lamp holders.....	20,321	4,900		
Other lamp holders, including lumiline.....	110,447	15,604		
Caps, all types, sold separately.....	4,950	348		
Lamp holders, fluorescent type, including cold cathode fluorescent.....	71,808	8,546		
Convenience and power outlets:				
Flush, 15 amperes and under (all types).....	67,433	11,933	n.a.	3,470
Flush, over 15 amperes (all types).....	2,003	1,637		
Surface, all types.....	18,633	3,638		
Attachment plug caps and connector bodies.....	n.a.	9,957	n.a.	2,991
Switches (excluding knife and time switches):				
Appliance and special application switches:				
15 amperes and under.....	58,988	14,066	n.a.	8,151
Over 15 amperes.....	7,191	4,751		
Canopy, fixture, and portable lamp switches.....	23,755	3,643		
Other switches, excluding knife and time switches:				
Flush, rated 10 amperes 125 volt; 5 amperes 250 volt.....	54,924	12,072		
Flush, all other.....	2,098	1,015		
Surface, all types.....	9,972	2,383		
Fluorescent starters and parts.....		11,152		n.a.
Switch and outlet face plates (all types).....	61,322	3,999	n.a.	1,308
Wire connectors:				
Solderless connectors, including industrial and service.....	n.a.	17,905	n.a.	3,722
Other connectors, including solder lugs and splicing sleeves.....	n.a.	5,262	n.a.	1,369
Other wiring devices, including rosettes, etc.....		10,041		
Current-carrying wiring devices, not specified by kind.....		4,524		9,310
Noncurrent-carrying wiring devices and supplies		161,196		46,108
Stamped metal boxes, covers, and accessories, including conduit boxes:				
Switch boxes.....	51,375	8,350	n.a.	5,991
Outlet boxes.....	85,538	10,997		
Concrete boxes.....	n.a.	901		
Covers and accessories, including supports and bar hangers.....		3,602		
Cast metal boxes, covers, and accessories, including conduit boxes.....		13,727		
Electrical conduit and conduit fittings:				
Underground conduit and underfloor raceways, including fittings and accessories.....		1,800		32,505
Other electrical conduit.....		37,532		
Fittings (other than those included above).....		35,508		
Rail bonds for both propulsion and signal circuits.....		2,450		655
Lightning arresters and choke coils for power transmission and distribution circuits and for railway signalling power circuits.....		11,006		5,217
Overhead trolley-line material (except poles, wire, and cable, and pole-line hardware).....		5,464		1,740
Noncurrent-carrying wiring devices and supplies, not specified by kind.....		20,799		
Pole-line and transmission hardware		57,707		n.a.
Pole-line hardware, excluding transmission hardware for high voltage porcelain products.....		50,089		17,614
Transmission hardware for high voltage porcelain products (including clamps and fittings, strain yokes, etc.).....		7,618		n.a.
Wiring devices and supplies, not specified by type.....		3,000		
Carbon and graphite products		68,604		18,585
Brushes (carbon, graphite, metal-graphite, and metal impregnated):				
Automotive brushes (automotive and light truck type, 6 to 12 volts, inclusive).....		4,764	n.a.	4,654
Fractional horsepower brushes (¼ sq. in. or less in cross-section or 1½ in. long or less).....		3,181		
Industrial brushes (over ¼ sq. in. in cross-section and over 1½ in. long).....		8,298		
Electrodes for batteries.....		2,073		
Electrodes for welding and cutting.....		204		
Electrodes for all other purposes, including those for electric furnace and electrolytic use.....		41,471		13,255
Miscellaneous carbon, graphite, metal-graphite, and metal-impregnated specialties:				
For electrical uses, including contacts, pot liners, etc.....				
For mechanical and other uses, including packing rings for steam seal, paste and plates for welding, etc.....		5,254		
Plate stock and rod and powder stock for making brushes and for miscellaneous applications.....		3,359		676
Carbon and graphite products, not specified by type.....				
Electrical integrating instruments		63,650		n.a.
A.C. watt-hour meters:				
Single phase.....			1,896	17,616
Polyphase.....	3,277	44,907		
Demand meters, including combined watt-hour and demand meters (single or polyphase).....	211	5,096		
Other electrical integrating meters, including combined watt-hour and time switch meters, D.C. watt-hour meters, ampere-hour meters, etc.....	237	6,862		1,617
Parts for electrical integrating instruments, sold separately, and integrating instruments, not specified by type.....		2,121		
		4,604		n.a.

See footnotes at end of table.

TABLE 6-A.—QUANTITY AND VALUE OF PRODUCTS, TOTALS FOR THE UNITED STATES: 1947 AND 1939—Continued

PRODUCT	1947		1939	
	Total shipments and interplant transfers		Total production for sale and interplant transfer	
	Quantity	Value f.o.b. plant	Quantity	Value f.o.b. plant
	(M units)		(M units)	
Electrical test equipment		\$54,805		n.a.
Oscilloscopes, high frequency type, designed primarily for radio testing.....		766		
Other types of oscilloscopes and oscillographs.....		4,048		
Volt-ohm-milliameters.....		2,535		n.a.
Electronic volt-ohm-milliameters.....		723		
Resistor, capacitor, and inductor measuring equipment.....		1,653		
Analyzers for testing characteristics of internal-combustion engines and auxiliary equipment.....		15,193		\$2,020
Tube characteristic measuring instruments for receiving tubes.....		2,058		584
Micro-wave test equipment.....		2,512		
Signal generators.....		3,774		
Radio frequency measuring equipment.....		1,813		n.a.
Other electrical test equipment, including broadcast transmitter test and monitoring equipment.....		9,992		
Electrical test equipment, not specified by kind.....		9,257		
Parts for test equipment, sold separately.....		481		
Electrical measuring instruments, other than integrating instruments and test equipment ⁶		37,885		n.a.
Indicating instruments:				
Panel type instruments:				
Nominal size 4½ in. and smaller, excluding motor vehicle and aircraft type ⁷	1,039	8,369	692	2,173
Nominal size larger than 4½ in., including all exploded types but excluding motor vehicle and aircraft type ⁷	108	2,155		
Aircraft type ⁸	43	408	n.a.	n.a.
Switchboard type instruments, 4½ in. nominal size and larger with accuracy within 1% of full scale.....	115	3,111	67	1,025
Portable instruments:				
Industrial portable ammeters, voltmeters, watt-varmeters, etc. including hook-on and split core current measuring types.....	68	1,659	27	762
Laboratory type—with accuracies within (±) 1%, up to 1/10% of full scale and better—all case sizes.....	44	2,317	n.a.	(9)
Other indicating instruments, including ammeters and voltmeters for motor vehicles but excluding electrical test equipment.....		2,502		(9)
Instrument, meter, and tripping transformers (current and potential).....	278	10,628	n.a.	(9)
Recording instruments, excluding control types.....	14	1,911	6	553
Instrument relays, all types.....	40	899	n.a.	n.a.
Parts for indicating and recording instruments.....		3,468		n.a.
Indicating and recording instruments, not specified by type.....		458		n.a.
Electrical measuring instruments, not specified by type		1,113		n.a.
Motors and generators, and motor-generator sets shipped to other companies and to other plants of the same company		855,577		
Motors, generators, and motor-generator sets shipped to other companies ¹⁰		803,202		
Fractional horsepower motors.....		309,403		
Integral horsepower motors and generators.....		258,705		
Prime mover-generator sets other than steam or hydraulic turbine.....		33,790	(11)	(11)
Motor-generator sets and other rotating equipment.....		37,510		
Motors, generators, and control apparatus for land transportation equipment.....		69,646		
Parts and supplies for motors, generators, and motor-generator sets.....		80,087		
Motors, generators, and motor-generator sets, not specified by type.....		14,121		
Motors, generators, and motor-generator sets shipped to other plants of the same company.....		52,315		
Specialty transformers		80,672		9,899
Control, signalling, doorbell, and toy.....		6,117		939
Luminous tube, including series fluorescent lighting applications.....	1,290	10,742	840	4,389
Ignition, including oil and gas-furnace ignition applications but excluding internal-combustion engine ignition.....	1,171	9,369		
Fluorescent lamp ballasts, all types, including resistance, inductance, and combinations of inductance and capacitance.....	16,051	35,158		
General purpose and miscellaneous applications involving voltages of 600 volts and below.....		17,699		4,571
Specialty transformers, not specified by type.....	(Units)	1,587	(Units)	
Power and distribution transformers ¹²		205,943		51,005
50 KVA and under, 15,000 volts and below.....	925,688	107,886		
51 KVA to and including 200 KVA, 15,000 volts and below.....	27,177	19,785	n.a.	37,744
201 KVA to and including 500 KVA, 15,000 volts and below, and 500 KVA and under of voltage above 15,000.....	14,456	19,388		
Over 500 KVA, all voltages.....		58,884		13,261
Parts and supplies, power regulators, boosters, and reactors		37,463		
Current limiting reactors.....		1,650		
Feeder-voltage regulators and boosters.....		12,976		4,160
Parts and accessories for power, distribution, and specialty transformers.....		22,837		
Liquid filled (all voltages) and dry type transformers above 600 volts for applications other than previously indicated and power, distribution, and specialty transformers, not specified by type.....		2,699		

See footnotes at end of table.

TABLE 6-A.—QUANTITY AND VALUE OF PRODUCTS, TOTALS FOR THE UNITED STATES: 1947 AND 1939—Continued

PRODUCT	1947		1939	
	Total shipments and interplant transfers		Total production for sale and interplant transfer	
	Quantity	Value f.o.b. plant	Quantity	Value f.o.b. plant
	(Units)		(Units)	
Switchgear and switchboard apparatus		\$360,988		\$76,982
Panelboards and distribution boards:				
Panelboards, including enclosing cabinets (all types of panelboards; fuse only, combination switch and fuse, and circuit breaker).....		23,013		8,423
Distribution switchboards.....		9,765		2,872
Other, including theater switchboards, and enclosed branch circuit cut-outs not including load centers.....		1,977		3,157
Switches, excluding switches commonly known as snap, toggle, and rotary switches; and switch devices intended primarily to be used with electric motor controls:				
Knife switches, 600 volts and under, open and enclosed, including enclosed manual circuit breaker:		7,783		8,871
Open knife switches and parts and switch interiors.....		49,861		
Enclosed switches, including pull out types and enclosed manual circuit breakers.....		5,765		1,774
Time switches.....		7,845		4,801
Other switches (excluding snap, toggle, push, etc.).....				
Circuit breakers:				
Power circuit breakers:				
Indoor, including oil circuit breakers, all voltages, and oilless circuit breakers over 1,200 volts.....		8,913		3,436
Outdoor, oil and oilless:				
To and including 34,500 volts.....		15,630		3,591
Over 34,500 volts.....		18,441		5,293
Air circuit breakers, 1,200 volts and under:				
With interrupting ratings of 10,000 amperes and under for circuit ratings up to and including 100 amperes in frames not exceeding that rating (in supporting and enclosing housings of insulation materials).....		6,807		
With interrupting ratings of 10,000 amperes and over, including those in frame sizes over 100 amperes (in supporting and enclosing housings of insulation materials), in individual enclosures, generally of steel; and those not enclosed.....		12,131		4,879
Other circuit breakers.....		7,128		
Power switchboards:				
Automatic and manual panels (generator, transformer, feeder-control, etc.).....		15,608		6,508
Metal enclosed switchgear (using power circuit breakers, oil and oilless, and low voltage air circuit breakers).....		63,555		8,440
Metal enclosed bus bar structures, for sale separately.....		11,855		
Relays, regulators, and miscellaneous switchboard devices, for sale separately.....		24,108		3,185
Power switching equipment, including attachments, auxiliaries, bus supports and fittings, and accessories, but not including power fuses sold separately:				
Outdoor.....		18,881		
Indoor.....		3,354		
Power and distribution fuses and fuse links for 2,300 volts and over, A.C. service, excluding distribution cut-outs:				11,75
Outdoor.....		2,747		
Indoor.....		1,045		
Power connectors.....		3,038		
Distribution cut-outs.....		9,431		
Switchgear and switchboard apparatus, not specified by type.....		30,708		
Industrial electrical control equipment (except railway and motor vehicle controllers)		169,910		46,039
A.C. general purpose controls.....		60,748		16,066
D.C. general purpose controls.....		6,514		4,420
General purpose control accessories, including rheostats and resistors.....		43,158		
Resistance welder controls, electronic and magnetic.....		4,306		24,053
Electronic controls, other than resistance welder controls.....		7,078		
Other industrial controls.....		33,383		
Industrial electrical control equipment, not specified by type.....		5,123		
Domestic automatic controls ¹³		70,732		n.a.
Fuses and fuse equipment under 2,300 volts (except power distribution cut-outs)		20,698		6,880
Nonrenewable plug fuses.....		6,520		1,024
Nonrenewable cartridge fuses.....		3,540		
Renewable plug and cartridge fuses.....		0,180		
Renewal links for renewable plug and cartridge fuses.....		695		4,056
Other fuses and open fuse material, including cut-outs, clips, bases, etc.....		3,534		
Fuses and fuse equipment under 2,300 volts, not specified by type.....		208		
Electrical control apparatus, not specified by type		2,044		
Arc welding machines, welding parts, components, and accessories		32,110		8,624
Arc welding machines:				
Alternating current transformer arc welders:				
180 amps. and below.....	32,059	2,700		
Over 180 amps.....	17,250	8,865	9,024	1,040
Direct current arc welders:				
Complete units only:				
Engine driven.....	13,821	10,905	2,255	1,859
Motor driven.....	17,442	7,325	13,070	3,672
Generators only.....	2,061	537		
Automatic welding heads for arc welding.....	552	842		
Accessories for arc welding machinery (including electrode holders, ground clamps, arc torches, and protective devices such as helmets, shields, goggles, etc.).....				2,053
Arc welding machines, welding parts, components, and accessories, not specified by type; and standard positioners for arc welding.....		4,018		
		1,219		

See footnotes at end of table.

TABLE 6-A.—QUANTITY AND VALUE OF PRODUCTS, TOTALS FOR THE UNITED STATES: 1947 AND 1939—Continued

PRODUCT	1947		1939	
	Total shipments and interplant transfers		Total production for sale and interplant transfer	
	Quantity	Value f.o.b. plant	Quantity	Value f.o.b. plant
Arc welding electrodes	(M pounds)			
Mild steel (cut lengths)		\$43,987		
Alloy steel (cut lengths), except hard surfacing	343,218	28,109		
Nonferrous (cut lengths), except hard surfacing	21,786	8,794		
Hard surfacing (all types, including tool steel)	3,701	3,007		
Electrodes in coils for automatic arc welding (including electrodes for submerged arc welding)	5,595	3,280		
	7,433	797		
Resistance welders, parts, components, accessories and electrodes	(Units)	29,874		
Spot welders (including single electrode, multielectrode and gun type)	7,990	11,382		
Projection welders	668	3,255		
Seam welders	228	2,032		
Flash and butt welders	1,207	2,356		
Other resistance welders	4,839	3,462		
Resistance welder transformers (sold separately)	3,257	877		
	(M pounds)			
Resistance welder electrodes	2,140	3,359		
Resistance welder accessories (including electrode holders)		1,431		
Resistance welders, parts, components, accessories and electrodes, not specified by type		1,720		
Electrical welding apparatus, not specified by type		1,645		
	(Units)	7,629		
High frequency induction and di-electric heating apparatus				
Induction heating apparatus:				
Output rating:				
10 KW and under	n.a.	762		
Over 10 KW and under 50 KW	189	1,467		
50 KW and over	48	1,476		
Di-electric heating apparatus:				
Output rating:				
10 KW and under	n.a.	1,873		
Over 10 KW	n.a.	532		
High frequency induction and di-electric heating apparatus, not specified by type		1,519		
	(M units)			
Capacitors for industrial use		38,269		
Power capacitors (including shunt and series capacitors and accessories)		19,383		
Other capacitors, excluding communication types other than coupling:				
A.C. capacitors, except electrolytic:				
General purpose for motors, controls, etc.	3,009	2,788		
Capacitors for fluorescent lamp ballasts	12,846	8,223		
Electrolytic capacitors (A.C. type for motor starting)	4,650	3,857		
D.C. capacitors for general industrial application such as filters, blocking, bypass, and discharge service	5,364	2,105		
Other capacitors, including coupling capacitors and those not specified by type		1,913		
Miscellaneous electrical equipment for industrial use		69,710		
Electric heating units for furnaces and ovens, sold separately		408		
Industrial electric heating units and devices (including industrial strip, space, and ring heaters, water and oil immersion heaters, metal pots and metal immersion heaters, glue and compound pots, etc.)		13,630		
Rectifying apparatus (excluding communication applications):				
Power mercury arc rectifiers		3,657		
Electronic tube power apparatus		608		
Other rectifying apparatus		16,844		
Electric soldering irons	1,498	3,013		
Other miscellaneous electrical equipment for industrial use, including industrial electrical equipment, not specified by type		31,550		

n.a.—Not available.

¹ Installed generally as a component part of an electrical appliance or piece of electrical equipment.² Quantity represents the number of gangs, i.e., a three gang plate is counted as three.³ Includes the value of rigid (standard weight) conduit, couplings, nipples, bends and elbows; electrical metallic tubing (thin wall conduit) and elbows; and flexible steel conduit shipped by establishments classified in the electrical group of industries. Data for these types of conduit shipped by establishments classified in industries not in the electrical group were not reported separately and therefore are not available for inclusion in these statistics.⁴ Includes conduit connectors, pipe straps, staples, service entrance caps and ells, insulating bushings, etc., and fittings for armored cable, nonmetallic wiring systems, and service cables.⁵ Includes transfers of plate stock and rod and powder stock to other establishments of the same company for further processing into brushes, etc.⁶ Instruments designed fundamentally to indicate, measure, or record electrical quantities but whose scales may be marked in other than electrical quantities.⁷ Initial accuracy within (plus or minus) 2 percent of full scale deflection for all types, except rectifier types. Initial accuracy for rectifier types within (plus or minus) 5 percent of full scale deflection.⁸ Instruments for measuring electrical quantities only. Includes ammeters, voltmeters, wattmeters, watt-varmeters, frequency meters, phase sequence indicators, etc., Motor vehicle meters, laboratory instruments, other electrical indicating instruments, and instrument, meter, and tripping transformers combined to avoid disclosing figures for individual companies. The combined value of these items in 1939 was \$8,943,000.⁹ More detailed statistics for motors, generators, and motor-generator sets are shown in tables 6-B through 6-E.¹⁰ No detailed 1939 comparative data available.¹¹ Liquid filled (all voltages) and dry type transformers above 600 volts for distribution and power service.¹² Includes automatic electric controls for air conditioning, refrigeration and comfort handling which are capable of handling a current not in excess of 30 amperes or handling directly any motor having a rating not higher than 1½ horsepower.¹³ Includes the value of resistance welder electrodes, carbon and graphite welding electrodes, and gas welding wire.

TABLE 6-B.—QUANTITY AND VALUE OF MOTORS, GENERATORS, AND MOTOR-GENERATOR SETS, SHIPPED TO OTHER COMPANIES (COMMERCIAL SHIPMENTS), BY TYPE AND SIZE: 1947

[This table excludes motors, generators, and motor-generator sets transferred to other plants of the same company and those produced and incorporated into other products made in the same establishment]

[Money figures in thousands of dollars]

PRODUCT	1947		PRODUCT	1947	
	Total shipments and interplant transfers			Total shipments and interplant transfers	
	Quantity	Value f.o.b. plant		Quantity	Value f.o.b. plant
	(M units)			(Units)	
Fractional horsepower motors ¹	2 37, 238	\$309, 403	Integral horsepower motors and generators—Continued		
Aircraft (all types):			Direct current motors and generators: ²		
Under 1/20 hp.....	698	4, 699	1 to 5 hp.....	38, 496	\$6, 551
1/20 hp. and over.....	40	1, 511	5.1 to 20 hp.....	25, 493	14, 430
Clock type synchronous and sub-synchronous timing motors.....	2, 588	3, 941	21 to 50 hp.....	6, 430	5, 795
			51 to 200 hp.....	3, 848	5, 659
			201 to 500 hp.....	701	3, 340
			Over 500 hp.....	417	9, 938
Universal (other than listed above):			Alternating current generators: ⁴		
Below 1/100 hp. (including toy motors and auto heater motors).....	571	1, 812	To but not including .75 KW.....	913	48
1/100 hp. and over but not including 1/70 hp.....	723	4, 700	.75 to 3 KW.....	2, 463	350
1/70 hp. and over but not including 1/40 hp.....	561	2, 298	3.1 to 15 KW.....	2, 203	694
1/40 hp. and over but not including 1/20 hp.....	1, 001	6, 411	15.1 to 40 KW.....	1, 822	1, 560
1/20 hp. and over but not including 1/6 hp.....	457	3, 927	41 to 150 KW.....	1, 260	1, 747
1/6 hp. and over but not including 1/2 hp.....	1, 930	14, 372	151 to 400 KW.....	454	1, 747
1/2 hp. and over but not including 1 hp.....	233	2, 818	Over 400 KW.....	703	10, 430
Direct current motors (other than listed above):			Prime mover-generator sets other than steam or hydraulic turbine ⁵		33, 790
Below 1/20 hp. (including toy motors and auto heater motors).....	3, 837	10, 281	Gasoline-engine driven generator sets.....	55, 158	21, 826
1/20 hp. and over but not including 1/6 hp.....	676	3, 085	Other generator-set units, including Diesel-engine driven and wind-driven generator sets.....		11, 964
1/6 hp. and over but not including 1/2 hp.....	121	3, 150			
1/2 hp. and over but not including 1 hp.....	43	1, 948	Motor-generator sets and other rotating equipment.....		37, 510
Shaded pole alternating current motors:			Motor-generator sets, including dynamotors, converters, inverters, and frequency changers:		
Below 1/100 hp. (including toy motors).....	1, 944	4, 983	Synchronous converters and double current generators.....	0, 785	1, 018
1/100 hp. and over but not including 1/70 hp.....	736	2, 744	Other motor-generator sets:		
1/70 hp. and over but not including 1/40 hp.....	2, 063	9, 317	Fractional horsepower (less than 3/4 KW).....	13, 169	1, 599
1/40 hp. and over but not including 1/20 hp.....	177	1, 480	3/4 to 150 KW.....	12, 084	9, 618
Other A.C. motors:			151 to 400 KW.....	431	3, 445
Below 1/100 hp. (including toy motors).....	3, 199	6, 544	Over 400 KW.....	141	4, 510
1/100 hp. and over but not including 1/70 hp.....	261	1, 151	Gear motors, all sizes and types.....	138, 050	16, 530
1/70 hp. and over but not including 1/40 hp.....	263	2, 598	Other rotating equipment, including selsyns, autotrans, synchrotes, synchronous condensers, etc.....		790
1/40 hp. and over but not including 1/20 hp.....	541	5, 763			
1/20 hp. and over but not including 1/6 hp.....	2, 824	23, 453	Motors, generators, and control apparatus for land transportation equipment.....		69, 646
1/6 hp. and over but not including 1/2 hp.....	9, 847	129, 990	Motors, generators, and control equipment for gasoline-electric and Diesel-electric buses, trucks, and locomotives, including parts and supplies.....		41, 873
1/2 hp. and over but not including 1 hp.....	1, 895	53, 527	Railway motors, generators, and control equipment and motors and control equipment for storage-battery powered transportation equipment, including parts and supplies.....		27, 773
Fractional horsepower motors, not specified by type.....		2, 990	Parts and supplies for motors, generators, and motor-generator sets.....		80, 087
			Motors, generators, and motor-generator sets, not specified by type.....		14, 121
Integral horsepower motors and generators.....	(Units)	258, 705			
Alternating current motors:					
Single phase, all sizes.....	469, 873	28, 535			
Polyphase-induction:					
1 to 5 hp.....	940, 273	68, 076			
5.1 to 20 hp.....	244, 604	38, 638			
21 to 50 hp.....	60, 026	22, 077			
51 to 200 hp.....	19, 224	13, 875			
201 to 500 hp.....	2, 039	5, 800			
Over 500 hp.....	417	4, 093			
Synchronous and other A.C. motors:					
1 to 500 hp.....	2, 343	5, 906			
Over 500 hp.....	408	3, 415			

NOTE: The horsepower shown for A.C. and D.C. motors, 200-horsepower and below, is for open type frame at a speed of 1,800 r.p.m. Motors at other speeds and enclosures are converted to equivalent ratings at 1,800 r.p.m., e.g., a 1/3 hp., 12,000 r.p.m. universal motor has been reported as a 1/20 hp. motor at 1,800 r.p.m.

¹ Excludes starting motors for internal-combustion engines.² Does not include quantity for \$2,990,000 of fractional horsepower motors, not reported by type.³ Excludes starting motors and battery charging generators for internal-combustion engines; generators and propulsion motors used as an integral part of land transportation equipment; and are welding generators.⁴ Excludes generators used as an integral part of land transportation equipment and are welding generators.⁵ Excludes motor-generator sets and generator-set units for incorporation into land transportation equipment.

TABLE 6-C.—FRACTIONAL HORSEPOWER MOTORS—TOTAL PRODUCTION BY TYPE AND SIZE: 1947

[This table includes fractional horsepower motors shipped to other companies and those produced for incorporation into other products of the same company]

[Thousands of motors]

PRODUCT	Total	Shipments to other companies	Produced for incorporation into other products of the same company (including transfers to other plants of the same company)	PRODUCT	Total	Shipments to other companies	Produced for incorporation into other products of the same company (including transfers to other plants of the same company)
Total fractional horsepower motors¹	57,553	34,650	22,903	Direct current (other than listed above):			
Below 1/20 hp.	25,592	16,398	9,194	Below 1/20 hp.	6,474	3,837	2,637
1/20 hp. and over	31,961	18,252	13,709	1/20 hp. and over but not including 1/6 hp.	677	676	1
Aircraft (all types):				1/6 hp. and over but not including 1/2 hp.	132	121	11
Below 1/20 hp.	701	698	3	1/2 hp. and over but not including 1 hp.	48	43	5
1/20 hp. and over	61	49	12	Shaded pole alternating current:			
Universal (other than listed above):				Below 1/100 hp.	3,394	1,944	1,450
Below 1/100 hp.	2,100	571	1,529	1/100 hp. and over but not including 1/70 hp.	869	736	133
1/100 hp. and over but not including 1/70 hp.	1,020	723	297	1/70 hp. and over but not including 1/20 hp.	2,493	2,063	430
1/70 hp. and over but not including 1/40 hp.	1,043	561	482	1/20 hp. and over but not including 1/6 hp.	308	177	131
1/40 hp. and over but not including 1/20 hp.	1,846	1,001	845	Other alternating current:			
1/20 hp. and over but not including 1/6 hp.	7,581	457	7,124	Below 1/100 hp.	3,736	3,190	537
1/6 hp. and over but not including 1/2 hp.	2,966	1,930	1,036	1/100 hp. and over but not including 1/70 hp.	585	261	324
1/2 hp. and over but not including 1 hp.	1,248	233	1,015	1/70 hp. and over but not including 1/40 hp.	477	263	214
				1/40 hp. and over but not including 1/20 hp.	854	541	313
				1/20 hp. and over but not including 1/6 hp.	5,443	2,824	2,619
				1/6 hp. and over but not including 1/2 hp.	11,471	9,847	1,624
				1/2 hp. and over but not including 1 hp.	2,026	1,895	131

¹ Data for clock-type synchronous and sub-synchronous timing motors are not included in this table.

TABLE 6-D.—INTEGRAL HORSEPOWER MOTORS AND GENERATORS—SHIPMENTS AND INTERPLANT TRANSFERS, BY TYPE AND SIZE: 1947

[This table does not include motors and generators produced for incorporation into other products made in the same establishment]

[Number of motors]

PRODUCT	Shipments and interplant transfers			PRODUCT	Shipments and interplant transfers		
	Total	Shipments to other companies	Transfers to other plants of the same company		Total	Shipments to other companies	Transfers to other plants of the same company
A.C. single phase (all sizes)	488,680	469,873	18,807	Synchronous and other A.C. motors (all sizes)	2,876	2,751	125
A.C. polyphase-induction:				Direct current motors and generators (all sizes)	79,636	75,385	4,251
1 to 5 hp.	978,102	940,273	37,829	Alternating current generators (all sizes)	11,192	9,908	1,284
5.1 to 20 hp.	255,091	244,604	10,487				
21 to 50 hp.	64,706	60,925	3,780				
Over 50 hp.	23,530	21,680	1,850				

TABLE 6-E.—MOTORS AND GENERATORS—SHIPMENTS AND INTERPLANT TRANSFERS, COMPARABLE QUANTITY DATA BY TYPE AND SIZE: 1947 AND 1939

[This table excludes motors and generators produced for incorporation into other products made in the same establishment. No comparable data exist for motor-generator sets]

PRODUCT	1947	1939	PRODUCT	1947	1939
	(M units)	(M units)		(Units)	(Units)
Fractional horsepower motors:			Integral horsepower motors and generators:		
Below 1/20 hp.	19,519	4,842	A.C. single phase (all sizes)	488,680	85,184
1/20 hp. and over, but not including 1 hp.	21,268	6,107	A.C. polyphase-induction:		
Clock-type synchronous and sub-synchronous timing motors ¹	2,588	306	1 to 5 hp.	978,102	366,581
			5.1 to 20 hp.	255,091	
			21 to 50 hp.	64,706	
			Over 50 hp.	23,530	
			Synchronous and other A.C. motors (all sizes)	2,876	5,172
			Direct current motors and generators (all sizes)	79,636	n.a.
			Alternating current generators (all sizes)	11,192	2,973

¹ 1947 data do not include a small amount of interplant transfers which could not be shown without disclosing figures for individual companies; 1939 data are for synchronous timing motors only.

TABLE 7.—SELECTED MATERIALS CONSUMED, BY KIND: 1947

The table below summarizes the consumption of selected metal shapes by manufacturers during 1947. For each shape, manufacturing establishments were required to report consumption, in quantity and cost, provided that such usage during 1947 exceeded the following amounts: for iron castings, steel castings, each of six carbon steel shapes—50 short tons; for alloy steel bars and all other alloy steel—25 short tons; for stainless steel, brass and copper wire mill shapes, copper and brass castings, aluminum mill shapes and aluminum castings—10 short tons]

[Money figures in thousands of dollars]

METAL SHAPE	WIRING DEVICES AND SUPPLIES INDUSTRY			ELECTRICAL MEASURING INSTRUMENTS INDUSTRY			MOTORS AND GENERATORS INDUSTRY			TRANSFORMERS INDUSTRY		
	Establishments consuming more than specified quantities											
	Number	Short tons	Cost	Number	Short tons	Cost	Number	Short tons	Cost	Number	Short tons	Cost
Iron castings, rough and semifinished.....	31	18,106	\$4,550	(1)	566	\$187	76	175,640	\$39,306	9	3,845	\$784
Steel castings, rough and semifinished.....	(1)	(d)	(d)				19	16,178	6,217	(1)	(d)	(d)
Steel mill shapes and forms.....	n.a.	350,553	29,270	n.a.	12,927	2,257	n.a.	568,624	66,008	n.a.	222,233	34,736
Carbon steel:												
Bars and bar shapes.....	35	82,811	6,084	(1)	277	50	67	66,154	6,514	11	8,464	900
Sheet and strip.....	84	134,978	12,604	11			104	287,570	35,227	43	82,237	10,092
Structural shapes.....	8	1,763	150				22	11,407	1,003	12	7,659	630
Plates.....	(1)	2,231	168		8,822	1,245	24	77,176	6,356	12	26,530	2,287
Wire.....	16	7,455	632	(1)			8	10,529	1,084	(1)	335	46
All other mill shapes and forms.....	9	120,924	9,566				13	54,878	6,690	10	4,131	513
Alloy steel, except stainless:												
Bars and bar shapes.....	(1)	218	35	(1)	836	352	22	7,254	1,076	(1)	4,800	725
All other mill shapes and forms.....	(1)			(1)	2,749	427	16	52,882	7,426	22	87,888	19,412
Stainless steel.....	5	173	140	(1)	243	183	14	714	632	(1)	189	131
Copper and copper-base alloy:												
Brass and wire mill shapes and forms.....	69	17,935	11,556	9	7,244	4,678	105	38,940	26,624	54	34,849	26,216
Castings, rough and semifinished.....	18	1,803	1,650	(1)	49	45	17	1,632	1,507	7	286	263
Aluminum:												
Aluminum mill shapes.....	19	2,446	1,372	8	1,067	829	13	3,381	1,251	(1)	616	736
Castings, rough and semifinished.....	21	2,277	2,306	6	2,589	2,298	41	6,296	5,314	(1)	82	69

METAL SHAPE	ELECTRICAL CONTROL APPARATUS INDUSTRY			ELECTRICAL WELDING APPARATUS INDUSTRY			ELECTRICAL INDUSTRIAL APPARATUS, N.E.C., INDUSTRY		
	Establishments consuming more than specified quantities								
	Number	Short tons	Cost	Number	Short tons	Cost	Number	Short tons	Cost
Iron castings, rough and semifinished.....	21	7,119	\$2,561	10	911	\$295	(1)	144	\$41
Steel castings, rough and semifinished.....	10	4,024	1,372	(1)	(d)	(d)			
Steel mill shapes and forms.....	n.a.	154,316	16,794	n.a.	170,670	16,428	n.a.	3,650	521
Carbon steel:									
Bars and bar shapes.....	38	9,714	1,014	10	5,617	503	(1)	190	16
Sheet and strip.....	107	116,837	11,568	18	13,077	1,180	7	1,028	233
Structural shapes.....	30	14,610	1,477	5	1,469	175	(1)	388	31
Plates.....	12	7,561	631	9	2,148	179	(1)		
Wire.....	5	1,189	199	20	144,109	11,567	(1)	912	68
All other mill shapes and forms.....	(1)	260	65	(1)					
Alloy steel, except stainless:									
Bars and bar shapes.....	(1)	1,201	350	(1)	1,136	155			
All other mill shapes and forms.....	(1)	1,631	371	5	642	292	(1)		
Stainless steel.....	7	1,304	1,119	10	2,472	2,377	(1)	241	173
Copper and copper-base alloy:									
Brass and wire mill shapes and forms.....	92	26,712	17,836	29	3,512	2,885	14	1,879	1,413
Castings, rough and semifinished.....	35	4,190	3,955	17	903	1,122	(1)	(d)	(d)
Aluminum:									
Aluminum mill shapes.....	13	3,105	1,979	(1)	244	151	7	384	482
Castings, rough and semifinished.....	8	267	351	5	81	132	(1)	(d)	(d)

METAL SHAPE	ELECTRICAL CONTROL APPARATUS INDUSTRY			ELECTRICAL WELDING APPARATUS INDUSTRY			ELECTRICAL INDUSTRIAL APPARATUS, N.E.C., INDUSTRY		
	Establishments consuming more than specified quantities								
	Number	Short tons	Cost	Number	Short tons	Cost	Number	Short tons	Cost
Iron castings, rough and semifinished.....	21	7,119	\$2,561	10	911	\$295	(1)	144	\$41
Steel castings, rough and semifinished.....	10	4,024	1,372	(1)	(d)	(d)			
Steel mill shapes and forms.....	n.a.	154,316	16,794	n.a.	170,670	16,428	n.a.	3,659	521
Carbon steel:									
Bars and bar shapes.....	38	9,714	1,014	10	5,617	503	(1)	100	16
Sheet and strip.....	107	116,837	11,588	18	13,077	1,180	7	1,028	233
Structural shapes.....	30	14,619	1,477	5	1,469	175	(1)	388	31
Plates.....	12	7,561	631	9	2,148	170	(1)		
Wire.....	5	1,189	199	20	144,109	11,567	(1)	912	68
All other mill shapes and forms.....	(1)	260	65	(1)					
Alloy steel, except stainless:									
Bars and bar shapes.....	(1)	1,201	350	(1)	1,136	155			
All other mill shapes and forms.....	7	1,631	371	5	642	292	(1)		
Stainless steel.....	16	1,304	1,119	10	2,472	2,377	(1)	241	173
Copper and copper-base alloy:									
Brass and wire mill shapes and forms.....	92	26,712	17,836	29	3,512	2,885	14	1,879	1,413
Castings, rough and semifinished.....	35	4,190	3,955	17	903	1,122	(1)	(d)	(d)
Aluminum:									
Aluminum mill shapes.....	13	3,105	1,979	(1)	244	151	7	384	482
Castings, rough and semifinished.....	8	287	351	5	81	132	(1)	(d)	(d)

^d Withheld to avoid disclosing figures for individual companies.

n.a.—Not available.

¹ Less than 5 establishments.

ELECTRICAL INDUSTRIAL APPARATUS

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TABLE 8.—NUMBER OF ESTABLISHMENTS PERFORMING SELECTED METALWORKING OPERATIONS: 1947

(The figures in the table represent the number of establishments maintaining the metalworking operation specified, according to the usual number of production workers employed in the operation during 1947)

METALWORKING OPERATION	WIRING DEVICES AND SUPPLIES INDUSTRY						ELECTRICAL MEASURING INSTRUMENTS INDUSTRY						MOTORS AND GENERATORS INDUSTRY					
	Number of establishments performing selected metalworking operations																	
	Total	Distribution by number of production workers in the operation					Total	Distribution by number of production workers in the operation					Total	Distribution by number of production workers in the operation				
		1-4	5-19	20-49	50-99	100 and over		1-4	5-19	20-49	50-99	100 and over		1-4	5-19	20-49	50-99	100 and over
Foundry.....	19	6	5	5	1	2	2	1	1	1	14	2	3	5	1	3		
Die casting.....	8	3	5	1	1	3	2	2	1	1	35	19	12	3	1	1		
Forging—presses, hammers, or upsetters.....	26	10	11	1	1	3	1	1	1	1	6	3	2	1	1	1		
Electroplating.....	40	25	9	5	1	1	18	12	4	1	29	18	7	3	1	1		
Galvanizing and other hot dip coating.....	42	14	15	10	1	2	5	5	1	1	11	5	4	1	1	1		
Heat treating or annealing of metals.....	29	25	4	1	1	1	16	15	1	1	50	40	6	3	1	1		
Automatic screw-machine department.....	48	29	12	5	2	1	18	11	2	2	56	19	22	11	3	1		
Machine shop.....	145	54	50	25	10	6	87	40	33	10	177	45	49	31	16	36		
Tool and die room.....	87	43	32	11	1	1	29	16	9	1	107	31	37	20	9	10		
Pattern shop.....	14	9	4	1	1	1	5	5	1	1	25	14	8	2	1	1		
Plate or structural fabrication.....	8	5	3	1	1	1	5	4	1	1	37	13	11	5	3	5		
Stamping, blanking, forming, or drawing.....	164	60	53	29	10	12	54	36	9	2	140	51	38	25	9	17		

METALWORKING OPERATION	TRANSFORMERS INDUSTRY						ELECTRICAL CONTROL APPARATUS INDUSTRY					
	Number of establishments performing selected metalworking operations											
	Total	Distribution by number of production workers in the operation					Total	Distribution by number of production workers in the operation				
		1-4	5-19	20-49	50-99	100 and over		1-4	5-19	20-49	50-99	100 and over
Foundry.....	2	1	1	1	1	9	2	1	3	2	1	
Die casting.....	1	1	1	1	1	1	1	1	1	1	1	
Forging—presses, hammers, or upsetters.....	2	2	1	1	1	3	1	2	1	1	1	
Electroplating.....	5	3	1	1	1	62	48	7	3	2	2	
Galvanizing and other hot dip coating.....	4	2	1	1	1	11	5	2	2	2	1	
Heat treating or annealing of metals.....	19	12	6	1	1	27	19	7	1	1	1	
Automatic screw-machine department.....	8	5	1	2	1	44	17	19	5	1	3	
Machine shop.....	53	25	17	6	2	179	70	53	29	15	12	
Tool and die room.....	21	11	6	1	3	91	32	39	10	4	6	
Pattern shop.....	3	2	1	1	1	17	10	5	2	1	1	
Plate or structural fabrication.....	19	3	7	4	5	62	15	29	11	5	2	
Stamping, blanking, forming, or drawing.....	56	29	11	10	6	172	72	51	25	9	15	

METALWORKING OPERATION	ELECTRICAL WELDING APPARATUS INDUSTRY						ELECTRICAL INDUSTRIAL APPARATUS, N.E.C., INDUSTRY					
	Number of establishments performing selected metalworking operations											
	Total	Distribution by number of production workers in the operation					Total	Distribution by number of production workers in the operation				
		1-4	5-19	20-49	50-99	100 and over		1-4	5-19	20-49	50-99	100 and over
Foundry.....	5	2	2	1	1	1	1	1	1	1	1	
Die casting.....	2	2	1	1	1	1	1	1	1	1	1	
Forging—presses, hammers, or upsetters.....	3	3	1	1	1	6	4	2	1	1	1	
Electroplating.....	2	2	1	1	1	1	1	1	1	1	1	
Galvanizing and other hot dip coating.....	13	12	1	1	1	7	6	1	1	1	1	
Heat treating or annealing of metals.....	11	9	1	1	1	9	7	2	1	1	1	
Automatic screw-machine department.....	63	17	23	13	7	63	40	17	6	1	1	
Machine shop.....	11	6	1	4	1	19	14	5	1	1	1	
Tool and die room.....	4	3	1	1	1	3	3	1	1	1	1	
Pattern shop.....	24	14	6	1	2	16	10	2	3	1	1	
Plate or structural fabrication.....	28	18	7	2	1	45	36	8	1	1	1	
Stamping, blanking, forming, or drawing.....												

NOTE: In the Wiring Devices and Supplies Industry 35 establishments did not answer this inquiry. Of these, 31 had fewer than 20 employees; and 4 had between 20 and 99 employees.

In the Electrical Measuring Instruments Industry 23 establishments did not answer this inquiry. Of these, 22 had fewer than 20 employees; and 1 had between 20 and 99 employees.

In the Motors and Generators Industry 26 establishments did not answer this inquiry. Of these, 16 had fewer than 20 employees; 8 had between 20 and 99 employees; and 2 had 100 or more employees.

In the Transformers Industry 15 establishments did not answer this inquiry. Of these, 14 had fewer than 20 employees; and 1 had between 20 and 99 employees.

In the Electrical Control Apparatus Industry 19 establishments did not answer this inquiry. Of these, 13 had fewer than 20 employees; 4 had between 20 and 99 employees; and 2 had 100 or more employees.

In the Electrical Welding Apparatus Industry 16 establishments did not answer this inquiry. Of these, 15 had fewer than 20 employees; and 1 had between 20 and 99 employees.

In the Electrical Industrial Equipment, N.E.C., Industry 40 establishments did not answer this inquiry. Of these, 32 had fewer than 20 employees; and 8 had between 20 and 99 employees.

ELECTRICAL APPLIANCES AND LAMPS; INSULATED WIRE AND CABLE; AND ENGINE ELECTRICAL EQUIPMENT

This report shows the 1947 Census of Manufactures statistics for establishments engaged primarily in the production of electrical appliances, electric lamps, insulated wire and cable, and engine electrical equipment. These establishments have been classified in four industries described separately below.

Electrical Appliances (*Standard Industrial Classification No. 3621.*)—This industry comprises establishments primarily engaged in manufacturing household and commercial electrical appliances used for heating, cooking, and other purposes. Important products of this industry are electric ranges, disc stoves, hot plates, cookers, casseroles, roasters, toasters, water heaters, irons, mixers, percolators, and circulating fans. Establishments primarily engaged in manufacturing domestic laundry machines are classified in Industry 3581, commercial laundry, dry-cleaning, and pressing machines in Industry 3582, sewing machines in Industry 3583, vacuum cleaners in Industry 3584, and mechanical and absorption refrigerators in Industry 3585.

While the Standard Industrial Classification includes electric dry shavers in Industry 3421, "Cutlery," the 1947 census includes electric dry shavers in the electrical appliance industry since they are produced primarily by companies engaged in manufacturing electrical appliances. In previous censuses, vacuum cleaners, now included in Industry 3584, and soldering irons, now included in Industry 3619, were included in this industry. Reports for 1939 have been retabulated on a comparable basis. Data for earlier years, however, are not available.

A considerable amount of the products primary to this industry was made in 1947 by establishments classified in other industries. Of the total value of \$548 million of electrical appliances, 28 percent was shipped by establishments classified in other industries. In addition to shipping almost \$393 million worth of electrical appliances, establishments classified in the Electrical Appliances Industry also shipped substantial quantities of other items, 14 percent of the total value of shipments of the industry consisting of products such as nonelectric cooking and heating apparatus and water heaters, domestic laundry equipment, etc.

Insulated Wire and Cable (*Standard Industrial Classification No. 3631.*)—This industry comprises establishments primarily engaged in manufacturing insulated or armored wire and cable from purchased wire. Establishments engaged in drawing wire from purchased rods and bars as well as in making insulated wire are classified in Industry 3392.

In 1947, as in 1939, the majority of the products primary to this industry were made by establishments classified in other industries. Of the total value of \$895 million of insulated wire and cable in 1947, 68 percent was shipped by establishments classified in other industries, primarily by those classified in the Wire Drawing Industry, 3392. The 338 percent increase in the value of insulated wire and cable from 1939 to 1947 is overstated because in 1939 a number of establishments misclassified their insulated wire and cable production as bare copper wire and the quantities were included in the bare copper wire figures of that census.

In 1939, some large establishments making insulated wire and cable from wire drawn in the same establishment from

purchased rods and bars were classified in the insulated wire and cable industry. However, in 1947 all such establishments were included in Industry 3392, Wire Drawing, in accordance with the Standard Industrial Classification. The general statistics on the insulated wire and cable industry for 1947 and 1939 are, therefore, not strictly comparable. This shift in the industry classification also accounts for most, if not all, of the apparently greater increase in insulated wire and cable output by establishments classified outside the insulated wire and cable industry than by those establishments classified in the industry itself.

Some insulated wire and cable is shipped to other companies for further fabrication into other types of wire and cable, such as armored building wire, flexible cord sets, etc. In order to measure the resulting duplication in value of shipments, data were collected for receipts of insulated wire and cable purchased from other companies or transferred from other plants of the same company for further fabrication. These figures (which represent less than 2 percent of the total value of shipments of insulated wire and cable) are shown in a footnote to table 6. They are important primarily in appliance cord. For each type of wire, by subtracting the cost of receipts from the total value of shipments, the net value of shipments (i.e., those leaving the industry) can be obtained. Cost of receipts of insulated wire and cable is shown only for the types of wire and cable for which purchases were relatively significant.

Engine Electrical Equipment (*Part of Industry 3641.*)—This industry comprises establishments primarily engaged in manufacturing electrical equipment for internal combustion engines. Important products of this industry include starting motors and battery-charging generators for automobiles, trucks, and busses, aircraft and marine and stationary internal combustion engines; and spark plugs, magnetos, coils, distributors, and other ignition apparatus for all internal combustion engines.

According to the Standard Industrial Classification, this industry also includes electrical equipment for railway locomotives and cars; and motors, generators, and control equipment for gasoline-electric and oil-electric buses and trucks, including storage battery trucks. However, the 1947 census includes all railway locomotive and car motors and generators, and motors, generators, and control equipment for gasoline-electric and oil-electric buses and trucks, including storage battery trucks, in Industry 3614, "Motors, Generators, and Motor Generator Sets," since they are produced primarily by companies engaged in the production of motors, generators, and motor generator sets.

Although more detailed data were collected for the products of this industry, some of these have been combined to avoid disclosing the figures of individual companies. The number and value of shipments of engine electrical equipment as shown in table 6 represent all shipments of these commodities including those shipped for initial equipment as well as for replacement. However, practically all of the shipments of the component parts, for sale separately, were for the replacement market.

The reports for 1939 have been retabulated to provide figures comparable with 1947. Data for earlier years are not available. In table 6, the commodity statistics shown for 1947 are not comparable with those collected in 1939. As a consequence the 1939 figures are not shown.

ELECTRICAL APPLIANCES, LAMPS, INSULATED WIRE, AND ENGINE EQUIPMENT 731

Electric Lamps (*Standard Industrial Classification No. 3651.*)—This industry comprises establishments primarily engaged in manufacturing electric bulbs, tubes, and related light sources. Important products of this industry include incandescent filament lamps, vapor and fluorescent lamps, photoflash and photoflood lamps, and other electric light sources. Establishments primarily engaged in manufacturing electrotherapeutic lamp units for ultraviolet and infrared radiation are classified in Industry 3693, electric lighting fixtures in Industry 3471, and glass blanks for bulbs in Industry 3229.

Figures on shipments of electric lamps were collected on a quarterly basis during 1947 on the Bureau of the Census Form M32B. The total value of shipments as reported in the Census of Manufactures for electric lamps differs from the value reported on the quarterly survey due to the fact that the data reported for some companies on the current survey reflected shipments from the company warehouses and included some warehousing cost, while the values reported in the Census of Manufactures represents shipments from the plant.

TABLE 1.—GENERAL STATISTICS FOR THE UNITED STATES: 1947 AND EARLIER CENSUS YEARS

[Money figures in thousands of dollars. For explanation of column captions see GENERAL EXPLANATIONS]

INDUSTRY AND CENSUS YEAR	Number of establishments	All employees		Production and related workers		Value added by manufacture ¹	Cost of materials, fuel, electricity, and contract work	Value of products shipped ²
		Number (average for the year)	Salaries and wages, total	Number (average for the year)	Wages, total			
Electrical appliances:								
1947	326	44,371	\$124,957	37,271	\$96,654	\$236,241	\$236,286	\$466,009
1939 ³	118	n.a.	n.a.	13,572	16,286	42,150	42,612	84,762
Insulated wire and cable:								
1947	171	21,282	68,044	18,185	45,375	103,722	197,394	301,116
1939	79	19,233	26,788	15,696	18,638	50,265	70,125	120,390
1937 ⁴	57	n.a.	n.a.	16,913	20,683	61,463	73,170	134,633
Engine electrical equipment:								
1947	110	43,920	125,393	37,978	102,144	196,351	156,988	353,339
1939 ³	90	n.a.	n.a.	17,043	23,675	66,066	40,565	106,631
Electric lamps:								
1947	62	23,842	57,914	21,550	48,801	120,344	82,904	203,248
1939	55	11,587	15,309	9,622	10,689	56,257	28,571	84,828
1937 ⁴	41	n.a.	n.a.	8,984	10,163	56,348	26,190	82,538

n.a.—Not available.

¹ Value of products less cost of materials, supplies, fuel, electricity, and contract work. For "Electrical appliances," see GENERAL EXPLANATIONS—Method of calculating value added by manufacture for selected industries in 1947.

² For 1947, value of products shipped; for all other years, value of products made. See GENERAL EXPLANATIONS—Value of products shipped.

³ The returns for 1939 have been retabulated to provide figures comparable with those for 1947. The figures for earlier years are not sufficiently comparable to be shown in this table.

⁴ "Insulated wire and cable" and "Electric lamps" were formerly classified in the discontinued industry "Electrical machinery, apparatus, and supplies." Separate figures for years prior to 1937 are not available.

TABLE 2.—GENERAL STATISTICS BY DIVISIONS AND STATES: 1947

[Money figures and man-hours in thousands. For explanation of column captions see GENERAL EXPLANATIONS]

INDUSTRY, DIVISION, AND STATE	Number of establishments	All employees		Production and related workers			Value added by manufacture	Cost of materials, fuel, electricity, and contract work	Value of products shipped	Expenditures for new plant and equipment
		Number (average for the year)	Salaries and wages, total	Number (average for the year)	Man-hours, total	Wages, total				
Electrical appliances, total¹	326	44,371	\$124,957	37,271	78,423	\$96,654	\$236,241	\$236,286	\$466,009	\$16,446
New England	23	8,661	23,388	7,138	15,725	18,788	43,146	42,588	84,523	2,289
Connecticut	17	8,421	23,080	7,018	15,514	18,572	42,837	42,101	83,727	2,279
Middle Atlantic	83	6,705	18,208	5,543	10,805	13,344	31,966	30,042	60,029	1,789
Pennsylvania	15	3,884	10,850	3,181	5,968	7,941	20,494	14,257	34,652	997
East North Central	129	21,449	63,239	18,206	39,086	49,630	124,034	126,569	249,382	9,619
Illinois	48	11,810	36,919	9,830	22,205	28,261	76,886	77,730	153,731	6,728
Michigan	31	2,195	7,220	1,819	3,659	5,650	11,779	11,108	22,867	910
Wisconsin	14	2,150	6,796	1,827	3,657	4,403	9,965	8,934	18,873	688
West North Central	22	3,842	9,769	3,053	6,297	6,546	16,348	16,089	31,620	1,086
South	23	718	1,426	600	1,130	973	2,887	7,135	9,503	650
West	46	3,096	8,927	2,731	5,380	7,373	17,860	13,863	30,952	1,013
California	26	2,147	6,366	1,857	3,749	5,147	12,684	9,026	21,223	839
Insulated wire and cable, total¹	171	21,282	68,044	18,185	37,160	45,375	103,722	197,394	301,116	6,071
New England	41	6,307	16,873	5,199	11,002	12,246	31,332	48,732	80,064	1,332
Massachusetts	19	2,381	6,329	1,955	4,254	4,505	11,471	16,685	28,156	444
Middle Atlantic	68	10,216	30,410	8,738	17,902	24,395	53,161	113,779	166,940	2,382
New York	40	3,834	12,222	3,344	6,843	9,698	19,666	42,140	61,796	801
New Jersey	19	5,259	15,474	4,502	9,246	12,455	28,851	62,885	91,736	1,383
Pennsylvania	9	1,023	2,714	892	1,813	2,242	4,654	8,754	13,408	198
North Central	46	4,259	9,254	3,845	7,448	7,685	16,544	27,667	44,211	2,168
Ohio	6	674	1,034	537	931	879	1,874	2,642	4,516	28
South and West	16	500	1,507	403	808	1,049	2,685	7,216	9,901	189
Kentucky	3	6	10	5	11	8	38	110	148	1
Engine electrical equipment, total¹	110	43,920	125,393	37,978	73,329	102,144	196,351	156,988	353,339	7,983
New England	9	2,219	5,418	1,887	3,713	4,041	8,583	8,404	16,987	806
Middle Atlantic	32	7,180	19,796	5,767	11,430	14,561	29,640	20,975	50,615	984
New York	20	6,412	17,779	5,144	10,229	13,163	27,361	18,924	46,285	898
New Jersey	6	519	1,403	406	767	936	1,424	1,237	2,661	52
Pennsylvania	6	249	614	217	434	462	855	814	1,669	34
East North Central	56	33,938	99,069	29,784	57,091	82,568	156,314	125,704	282,018	6,083
Ohio	12	13,137	40,431	11,566	21,790	34,224	67,433	45,641	113,074	2,075
Illinois	16	1,906	5,093	1,607	3,307	3,953	6,776	7,430	14,206	451
West North Central	6	351	664	331	671	614	912	1,000	1,912	52
South	6	155	272	140	293	218	598	760	1,358	36
Pacific	3	77	174	69	131	142	304	145	449	22

See footnotes at end of table.

CENSUS OF MANUFACTURES: 1947

TABLE 2.—GENERAL STATISTICS BY DIVISIONS AND STATES: 1947—Continued

INDUSTRY, DIVISION, AND STATE	Number of establishments	All employees		Production and related workers			Value added by manufacture	Cost of materials, fuel, electricity, and contract work	Value of products shipped	Expenditures for new plant and equipment
		Number (average for the year)	Salaries and wages, total	Number (average for the year)	Man-hours, total	Wages, total				
Electric lamps, total ¹	62	23,842	\$57,914	21,550	42,090	\$48,891	\$120,344	\$82,904	\$203,248	\$11,318
Massachusetts	5	3,667	8,384	3,468	6,584	7,639	20,324	11,998	32,322	1,645
New Jersey	15	9,394	24,840	8,192	16,327	20,037	38,308	25,424	63,822	4,250

¹ For each producing State not shown separately in the table (see GENERAL EXPLANATIONS "Disclosure of Data for Individual Companies"), there are shown below the number of establishments and, in parentheses, the number of employees for States represented by three or more companies, when possible.

Electrical appliances: *New England*, Massachusetts, 5; *Rhode Island*, 1; *Middle Atlantic*, New York, 51 (2,516); *New Jersey*, 17 (305); *East North Central*, Ohio, 26 (4,599); *Indiana*, 10 (695); *West North Central*, Minnesota, 7 (1,472); *Iowa*, 2; *Missouri*, 11 (2,007); *Nebraska*, 1; *Kansas*, 1; *South*, Virginia, 3 (300); *West Virginia*, 3 (71); *Georgia*, 1; *Florida*, 4 (22); *Kentucky*, 2; *Tennessee*, 7 (218); *Texas*, 3 (40); *West*, Colorado, 1; *Utah*, 2; *Washington*, 10 (516); *Oregon*, 7 (405).

Insulated wire and cable: *New England*, New Hampshire, 2; *Vermont*, 1; *Rhode Island*, 8 (1,535); *Connecticut*, 11 (2,316); *North Central*, Indiana, 8 (1,030); *Illinois*, 17 (1,228); *Michigan*, 8 (330); *Wisconsin*, 1; *Minnesota*, 1; *Iowa*, 1; *Missouri*, 4 (1,085); *South and West*, Maryland, 1; *North Carolina*, 1; *South Carolina*, 1; *Texas*, 1; *California*, 9 (421).

Engine electrical equipment: *New England*, New Hampshire, 1; *Massachusetts*, 7; *Connecticut*, 1; *East North Central*, Indiana, 7 (14,059); *Michigan*, 10 (3,248); *Wisconsin*, 5 (988); *West North Central*, Minnesota, 2; *Missouri*, 2; *Kansas*, 1; *South*, Maryland, 1; *West Virginia*, 1; *Georgia*, 2; *Texas*, 1; *Pacific*, California, 3 (77).

Electric lamps: *New York*, 6 (804); *Pennsylvania*, 6 (565); *Ohio*, 13 (5,241); *Illinois*, 6 (456); *Missouri*, 2; *Maryland*, 1; *West Virginia*, 1; *Kentucky*, 2; *Tennessee*, 1; *Mississippi*, 1; *Texas*, 1; *California*, 2.

TABLE 3.—DETAILED STATISTICS FOR THE UNITED STATES: 1947

[Money figures in thousands of dollars. For explanation of line captions see GENERAL EXPLANATIONS]

ITEM	Industry				ITEM	Industry			
	Electrical appliances	Insulated wire and cable	Engine electrical equipment	Electric lamps		Electrical appliances	Insulated wire and cable	Engine electrical equipment	Electric lamps
ALL ESTABLISHMENTS					ESTABLISHMENTS REPORTING DETAILED STATISTICS—Continued				
Number of establishments	326	171	110	62	Cost of materials, fuel, electricity, and contract work	\$234,000	\$107,304	\$160,988	\$82,904
All employees:					Materials, parts, containers, and supplies	215,089	192,947	153,275	80,381
Number (average for the year)	44,371	21,282	43,920	23,842	Fuels, total	2,069	1,223	1,128	923
Salaries and wages, total	\$124,957	\$58,044	\$125,393	\$57,914	Bituminous coal	734	201	679	65
Production and related workers:					Anthracite	10	44	6	13
Number (average for the year)	37,271	18,185	37,978	21,550	Coke	101	77	77	196
Man-hours, total	78,423	37,160	73,329	42,090	Fuel oils	679	639	209	615
Wages, total	\$96,654	\$45,375	\$102,144	\$48,891	Gas	427	271	265	34
Value added by manufacture	\$236,241	\$103,722	\$196,351	\$120,344	Other fuels	118	68	2	1,511
ESTABLISHMENTS REPORTING DETAILED STATISTICS					Purchased electric energy	1,970	1,830	1,062	89
Number of establishments	237	171	110	62	Contract and commission work	14,866	1,394	923	
All employees:					Value of inventories:				
Number (average for the year)	43,877	21,282	43,920	23,842	Beginning of year, total	\$65,347	\$34,607	\$46,599	\$15,402
Salaries and wages, total	\$123,890	\$58,044	\$125,393	\$57,914	Finished products	7,280	5,721	8,807	7,079
Production and related workers:					Materials, supplies, and work in process	58,067	28,046	37,792	8,323
Number (average for the year)	36,790	18,185	37,978	21,550	End of year, total	75,985	39,433	40,340	19,195
Man-hours, total	77,465	37,160	73,329	42,090	Finished products	13,822	10,632	11,942	9,967
Wages, total	\$95,650	\$45,375	\$102,144	\$48,891	Materials, supplies, and work in process	62,163	28,801	37,398	9,228
Value added by manufacture	\$234,793	\$103,722	\$196,351	\$120,344	Expenditures for plant and equipment:				
Number of employees for pay period ended nearest Oct. 15:					New plant and equipment	\$16,446	\$6,071	\$7,083	\$11,318
All employees:					Construction and major alteration of fixed plants	2,992	1,212	1,093	1,997
Male	45,424	20,705	41,307	23,433	Buildings	2,855	1,103	1,061	1,811
Female	29,074	13,940	26,808	6,115	Other construction	137	109	32	186
Production and related workers:					Machinery and equipment	13,454	4,859	5,900	9,321
Male	38,081	17,600	35,332	21,170	Production machinery and equipment	12,117	4,565	5,377	8,810
Female	24,431	11,960	22,660	4,833	Other machinery and equipment	1,337	294	613	511
Force-account construction workers	13,650	5,640	12,672	16,337	Used plant and equipment, and land	1,445	407	1,319	210
Administrative, supervisory, sales, and all other	2	63	11		Number of highway-type motor vehicles owned or leased:				
Male	7,341	3,105	5,912	2,252	Trucks	161	77	92	33
Female	4,641	1,980	4,085	1,271	By manufacturer's rated capacity:				
Female	2,700	1,125	1,827	981	Under 1½ tons	71	17	33	11
All employees, number by month:					1½ tons	59	25	37	14
January	42,311	22,681	46,740	24,732	Over 1½ tons and less than 3½ tons	19	11	15	8
February	42,808	22,798	47,114	24,434	3½ tons and less than 5 tons	7	9	1	
March	42,998	22,458	46,831	24,496	5 tons and over	5	15	0	
April	43,635	21,801	46,477	24,362	By body type:				
May	43,287	20,933	45,665	24,299	Van	16	15	8	9
June	43,354	20,870	43,623	23,702	Stake or platform	65	34	45	2
July	42,647	20,199	42,433	23,251	Panel or light delivery	60	10	29	18
August	42,091	20,138	42,873	23,187	All other trucks	20	18	10	4
September	43,819	20,393	42,026	23,284	Truck tractors	17	9	10	1
October	45,424	20,705	41,307	23,433	Trailers and semitrailers	32	10	19	
November	47,007	21,013	41,168	23,616					
December	47,132	21,330	40,818	23,281					

ELECTRICAL APPLIANCES, LAMPS, INSULATED WIRE, AND ENGINE EQUIPMENT 733

TABLE 4.—SELECTED GENERAL STATISTICS BY SIZE OF ESTABLISHMENT, FOR THE UNITED STATES: 1947

[Money figures in thousands of dollars. For explanation of line captions see GENERAL EXPLANATIONS. Data which cannot be shown without disclosing information for individual companies have been combined with figures for other groups. A ^d appears in the column where the figure has been omitted and the combined figure is printed in italics]

INDUSTRY AND ITEM	Total, all establish- ments	Establishments with an average of—									
		1-4 em- ployees	5-9 em- ployees	10-19 em- ployees	20-49 em- ployees	50-99 em- ployees	100-249 em- ployees	250-499 em- ployees	500-999 em- ployees	1,000- 2,499 employees	2,500 employees and over
Electrical appliances:											
Number of establishments.....	326	85	51	42	48	27	30	16	16	9	2
Number of employees (average for the year).....	44,371	227	350	604	1,452	2,029	4,486	6,196	11,319	17,708	(^d)
Value added by manufacture.....	\$236,241	\$909	\$1,640	\$3,049	\$6,250	\$9,852	\$21,944	\$30,997	\$55,361	\$106,239	(^d)
Insulated wire and cable:											
Number of establishments.....	171	35	19	19	27	24	18	21	5	3	
Number of employees (average for the year).....	21,282	76	121	258	763	1,718	3,070	7,218	(^d)	8,068	
Value added by manufacture.....	\$103,722	\$305	\$751	\$1,188	\$2,800	\$9,771	\$16,805	\$31,618	(^d)	\$40,484	
Engine electrical equipment:											
Number of establishments.....	110	9	9	18	21	13	18	8	5	6	3
Number of employees (average for the year).....	43,920	14	55	247	652	914	2,963	2,717	3,664	9,237	23,457
Value added by manufacture.....	\$190,351	\$36	\$140	\$1,017	\$2,691	\$3,350	\$9,327	\$13,591	\$14,750	\$37,346	\$114,103
Electric lamps:											
Number of establishments.....	62	5	(^d) 3	2	6	8	9	15	10	3	1
Number of employees (average for the year).....	23,842	11	(^d)	49	197	567	(^d)	7,125	16,883	(^d)	(^d)
Value added by manufacture.....	\$120,344	\$46	(^d)	\$169	\$514	\$1,805	(^d)	\$42,082	\$76,728	(^d)	(^d)

TABLE 5.—VALUE OF PRODUCTS SHIPPED, BY BROAD CLASSES OF PRODUCTS, FOR THE UNITED STATES: 1947

[The first column shows the total value of shipments of the specified industry, divided among: (A) products classified in (primary to) the industry, (B) products classified in other industries (secondary to the specified industry), and (C) miscellaneous receipts. The second column shows the value of shipments of the primary products of the specified industry reported by establishments in other industries. The third column shows the total value of shipments of the primary products of the specified industry by all reporting manufacturers]

[Money figures in thousands of dollars]

ELECTRICAL APPLIANCES INDUSTRY	Shipped by—			INSULATED WIRE AND CABLE INDUSTRY	Shipped by—		
	Electrical appliances industry	Other industries	All industries		Insulated wire and cable industry	Other industries	All industries
Total shipments by the industry.....	\$466,009			Total shipments by the industry.....	\$301,116		
A. Electrical appliances.....	392,550	\$155,787	\$548,337	A. Insulated wire and cable.....	288,351	\$606,777	\$895,128
Electric fans.....	26,258	22,398	48,656	B. Secondary products.....	10,334		
Electric water heaters.....	36,525	23,953	60,478	Noncurrent carrying wiring devices			
Small electric appliances, except fans	198,444	25,703	224,147	and supplies.....	5,863		
Domestic ranges, electric.....	65,609	66,626	132,235	Other secondary products.....	4,471		
Commercial cooking and food warm- ing equipment, electric.....	11,438	2,040	13,478	C. Miscellaneous receipts.....	2,431		
Dry shavers.....			22,009	Contract and commission work.....	1,411		
Parts and accessories for electric ap- pliances.....	54,27	15,067	40,729	Other receipts.....	1,020		
Electrical appliances, not specified by kind.....			6,605				
B. Secondary products.....	66,406						
Nonelectric cooking and heating ap- paratus.....	7,451						
Other secondary products (non- electric water heaters, domestic laundry equipment, etc.).....	58,955						
C. Miscellaneous receipts.....	7,053						
Contract and commission work.....	1,476						
Repair work.....	3,954						
Scrap and salable refuse.....	1,261						
Nonmanufacturing activities.....	362						

ENGINE ELECTRICAL EQUIPMENT INDUSTRY	Shipped by—			ELECTRIC LAMPS INDUSTRY	Shipped by—		
	Engine electrical equipment industry	Other industries	All industries		Electric lamps industry	Other industries	All industries
Total shipments by the industry.....	\$353,339			Total shipments by the industry.....	\$203,248		
A. Engine electrical equipment.....	306,489	\$30,526	\$337,015	A. Electric lamps.....	191,706		\$191,706
B. Secondary products (carburetors, domestic laundry equipment, in- sulated wire and cable, electric motors, switchgear, carbon and graphite products, etc.).....	38,204			B. Secondary products.....	11,527		
C. Miscellaneous receipts.....	8,646			Current carrying wiring devices.....	1,948		
Contract and commission work.....	1,020			Other secondary products (lamp components, special industry machinery, electrotherapeutic ap- paratus, etc.).....	9,579		
Repair work.....	1,375			C. Miscellaneous receipts.....	15		
Scrap and salable refuse.....	5,083						
Nonmanufacturing activities.....	1,168						

TABLE 6.—QUANTITY AND VALUE OF PRODUCTS, TOTALS FOR THE UNITED STATES: 1947 AND 1939

[Money figures in thousands of dollars]

PRODUCT	1947			1939	
	Total shipments and interplant transfers		Production, quantity (thousands of units)	Total production for sale and interplant transfer	
	Quantity (thousands of units)	Value f.o.b. plant		Quantity (thousands of units)	Value f.o.b. plant
Electric fans (including air circulators).....	4,330	\$48,656	4,504	n.a.	\$8,286
Desk and wall bracket:					
Oscillating:					
Under 12 inch.....	1,010	7,454	1,024	1,502	5,816
12 inch.....	732	10,530	760		
Over 12 inch.....	272	5,708	296		
Nonoscillating (all sizes).....	1,373	4,612	1,437	n.a.	2,470
High pedestal.....	206	7,617	214		
Other electric fans.....	737	12,775	773		
Electric water heaters, household type.....		60,478			n.a.
Storage (for permanent installation):					
34 gallons and under.....	983	59,383	987	82	3,340
35-54 gallons.....	323	16,014	324		
55 gallons and over.....	533	32,860	536		
Other permanent installation type, including circulating.....	127	10,503	127		
Portable storage (plug-in farm type).....		501			114
	19	504	19	n.a.	n.a.
Small electric appliances (household type) except fans.....		224,147			n.a.
Household type cooking and heating appliances:					
Broilers.....	255	1,712	264	1,802	3,575
Coffee percolators and urns.....	525	2,872	546		
Coffee makers, complete units.....	2,438	11,001	2,458		
Roasters.....	410	7,606	417	153	1,670
Toasters:					
Automatic.....	2,840	25,547	2,845	960	6,079
Nonautomatic.....	2,170	5,502	2,179	1,477	1,817
Waffle irons.....	1,897	10,679	1,868	708	2,146
Air space heaters (portable room heaters):					
Fan forced type.....	860	8,399	932	105	512
Convector type, other than fan forced.....	104	525	147		
Radiant type, other than fan forced, including units with both convection and radiant characteristics.....	880	4,732	911		
Hot plates and disc stoves.....	1,453	6,902	1,454	330	547
Other household type cooking and heating appliances ¹		28,204			n.a.
Electric irons:					
Standard household, steam.....	1,156	9,890	1,204	n.a.	n.a.
Standard household other than steam, automatic type (thermostat controlled heat):					
Under 4 pounds.....	5,600	31,421	5,732	2,340	6,638
4 pounds and over.....	2,895	14,839	2,889		
Other electric irons, including tailors', milliners', travel, boudoir, nonautomatic standard household, etc.....	1,353	3,087	1,353		
Household food preparation appliances:					
Food mixers ²	1,220	21,630	1,232		6,546
Other household food preparation appliances, including juice extractors, drink mixers, and whippers.....		2,935			
Attachments for food mixers, sold separately.....		491			n.a.
Other small electric appliances:					
Electric bed coverings, including blankets and comforters.....	630	12,903	645	904	1,595
Heating pads.....	2,140	6,899	n.a.		
Other small electric appliances (including curling irons, vibrators, hand and face dryers, etc.) and small electric appliances, not specified by kind.....		5,321			
Domestic ranges, electric ³	1,210	132,235	1,210	275	18,839
Standard type.....	1,022	120,044	1,022	n.a.	n.a.
Apartment house type (ranges up to approximately 24 inches with three or four burners and low oven).....	188	11,501	188		
Commercial cooking and food warming equipment, electric.....		13,478			
Commercial ranges, ovens, and broilers.....		2,676			3,334
Other commercial cooking equipment, including griddles, toasters, deep fat fryers, coffee makers, coffee urns, etc.....		8,108			944
Commercial food warming equipment, including hot food server units and steam tables.....		2,604			2,390
Dry shavers (electric razors).....	2,500	22,009	2,507	(4)	3,182
Parts and accessories for electrical appliances.....		40,729			n.a.
Electrical appliances, not specified by kind.....		6,605			n.a.

See footnotes at end of table.

ELECTRICAL APPLIANCES, LAMPS, INSULATED WIRE, AND ENGINE EQUIPMENT 735

TABLE 6.—QUANTITY AND VALUE OF PRODUCTS, TOTALS FOR THE UNITED STATES: 1947 AND 1939—Continued

PRODUCT	1947		1939	
	Total shipments and interplant transfers		Total production for sale and interplant transfer	
	Quantity (thousands)	Value f.o.b. plant	Quantity (thousands)	Value f.o.b. plant
Incandescent electric lamps and electrical discharge lamps, except cold cathode fluorescent		\$191,706		\$79,304
Total reported on quarterly Census Bureau reports, M32B (see text for explanation of differences from 1947 census figure shown above)				
Large incandescent:				
Photoflash ¹	1,786,333	184,389	n.a.	n.a.
Photoflood and photoenlarger	946,619	103,105	n.a.	(*)
General lighting, 160 watts and below ²	78,231	6,441	1,866	340
General lighting, above 160 watts ²	3,677	824		
Infrared heat lamps for therapeutic use	631,200	47,233		
Infrared drying lamps for industrial use	69,684	16,408		
Other large incandescent (special purpose) ³	1,697	1,325	518,900	58,773
	1,035	721		
	171,386	30,152		
Miniature incandescent ⁴				
Automotive, glass sealed beam ¹⁰	477,889	32,673	n.a.	n.a.
Automotive, metal sealed beam, (bulbs only)	22,640	10,371		
Other automotive miniature	11,454	1,540	136,553	7,241
Surgical, medical, and dental instrument lamps	239,327	12,410		
Other miniature incandescent ¹¹	296	122		
	203,772	8,130	n.a.	7,105
Christmas tree (all types)	273,498	9,674		
Electrical discharge (except Christmas tree)				
Germicidal, sterile, and bacterial lamps	88,329	49,036		
Fluorescent, hot cathode	287	784		
Miscellaneous electrical discharge, including glow, sodium, mercury, photo-chemical, blacklight, sun lamps (bulbs only) etc.	83,814	42,601	n.a.	* 5,845
	4,228	5,751		

PRODUCT	1947	1939
	Total shipments and interplant transfers (value f.o.b. plant) ¹²	Total production for sale and interplant transfer (value f.o.b. plant) ¹²
Insulated wire and cable	\$895,128	\$204,428
Communication wire and cable:		
Drop and bridge wire	21,564	
Inside and duet telephone wire	6,183	
Distribution and jumper wire	1,006	
Paper-insulated, lead-covered cable (except coaxial)	65,031	
Switchboard cable	32,735	11 20,424
Coaxial cable:		
Lead sheathed	25,702	
Flexible	1,294	
Other communication wire and cable	33,363	
Signal wire and cable	7,534	
Magnet wire:		
Enameled: ¹⁴		
Enameled only	90,094	
Enameled and covered	21,969	25,431
Not enameled (cloth and fibrous covered)	22,818	
Weatherproof and slowburning	76,256	20,856
Building wire and cable, excluding varnished cambric insulated: ¹⁵		
Metallic armored cable or conductor	23,914	
Synthetic (no braid)	17,631	12,985
Fibrous covered and/or jacketed, including lead covered	66,354	
Service cable	25,507	
Nonmetallic sheathed cable or conductor	39,119	
Other building wire and cable, excluding varnished cambric insulated	1,478	
Power wire and cable:		
Insulated for voltages not exceeding 600 volts:		
Portable power cables	14,494	
Varnished cambric insulated, including varnished cambric building wire	11,770	
Synthetic	5,710	12 62,063
Rubber insulated	18,666	
Asbestos and asbestos-varnished cambric	5,980	
Other, including paper insulated	3,394	
Insulated for voltages exceeding 600 volts:		
Portable power cables	3,768	
Varnished cambric insulated	14,328	
Paper insulated	32,480	
Rubber insulated	12,239	
Other	1,522	
Appliance wire and cord:		
Flexible cord, including heater cord	35,959	16,003
Fixture wire, including heat resistant	8,010	
Other appliance wire and cord	4,783	
Automotive and aircraft wire and cable, all types, including ignition harness sets and cable sets	83,724	11 40,826
Marine wire and cable (U. S. Navy and Merchant Marine)	4,276	
Other insulated wire and cable	24,897	
Flexible cord sets	29,576	5,840

See footnotes at end of table.

TABLE 6.—QUANTITY AND VALUE OF PRODUCTS, TOTALS FOR THE UNITED STATES: 1947 AND 1939—Continued

PRODUCT	1947	
	Total shipments and interplant transfers	
	Quantity (thousands of units)	Value f.o.b. plant
Engine electrical equipment		\$337,015
Complete units:		
Battery charging generators for internal combustion engines:		
6 volt—passenger car and light truck type.....	5,334	37,846
12 volt and higher—heavy duty truck and bus type.....	394	6,808
Other ¹⁶		5,768
Regulators for battery charging generators.....	14,165	22,097
Cranking motors for internal combustion engines:		
Passenger car and light truck type.....	5,022	35,029
Farm tractor and heavy duty truck and bus type.....	720	7,054
Other, including aircraft.....		4,813
Ignition apparatus for internal combustion engines:		
Ignition coils.....	11,867	18,358
Distributors.....	6,544	23,027
Ignition magnetos:		
Farm tractor type.....	744	8,852
Other ignition magnetos.....		14,353
Spark plugs: automotive and aircraft types.....	252,116	55,583
Switches specifically designed for use in vehicles and aircraft (all types, ignition, starting, lighting, etc.):		
Automotive vehicles (trucks, buses, and passenger cars).....	69,117	24,849
Other, including aircraft.....		1,749
Other ignition equipment.....		2,339
Component parts:		
Parts for battery charging generators:		
Armatures.....	2,020	6,474
Field coils.....	911	941
Parts for cranking motors.....		2,877
Parts for ignition distributors:		
Distributor heads.....	5,151	2,388
Rotors.....	7,193	1,002
Breaker point sets:		
Contact arms.....	34,336	6,841
Contact supports and screws.....	38,402	4,659
Condensers.....	11,716	2,351
Other engine electrical equipment, principally component parts (other than those listed above).....		40,357

n.a.—Not available.

¹ Includes immersion heaters, faucet attachment water heaters, electric steam radiators, air space heaters for fixed or permanent installation, cookers and casseroles, sand-wich grills, heating units for coffee-makers, sold separately, etc.² Value includes standard attachments sold with mixers.³ Includes ranges over 2½ kw. but excludes combination types. Data for combination ranges are included in the data for nonelectric domestic cooking stoves, ranges, and appliances.⁴ For \$2,851,000 of dry shavers produced in 1939 the quantity reported was 747,000.⁵ Includes all incandescent lamp bulbs designed to provide instantaneous high intensity illumination for photographic purposes.⁶ Data for photoflash lamps are included in the \$5,845,000 value shown for electrical discharge and other lamps in 1939.⁷ General lighting includes all large incandescent lamps for general lighting purposes, 15 watts and over; 100-130 volts.⁸ Other large incandescent lamps for special services such as sign and display; projection; aviation; street lighting; street railway; spot and flood lighting (including reflector spot and flood); train and country home lighting; traffic signal; rough service; showcase; other items for special application; and large incandescent lamps under 15 watts and/or other than 100-130 volts.⁹ Miniature incandescent includes all lamps operating from small voltages, usually bearing trade numbers.¹⁰ Includes all glass sealed beam units, specially designed for use on vehicles for highway illumination. These consist of complete units, containing the filament, reflector, and lens element, the latter two of which form the envelope of the bulb.¹¹ Other miniature incandescent includes all miniature incandescent lamps not covered above, i.e., such as flashlight, radio panel, toy, pin game, and other lamps for special applications.¹² Includes receipts of insulated wire and cable purchased from other companies or transferred from other plants of the same company for further fabrication. The 1947 data are as follows:

(Thousands of dollars)		(Thousands of dollars)	
Gross shipments of insulated wire and cable.....	\$895,128	Flexible cord, including heater cord.....	\$7,826
Less shipments within the industry for further fabrication.....	15,618	Fixture wire, including heat resistant.....	808
Magnet wire, enameled only.....	878	Automotive and aircraft type wire (including ignition harness sets and cable sets).....	2,925
Building wire, fibrous covered and/or jacketed.....	1,402	Net shipments of insulated wire and cable.....	879,510
Building wire, nonmetallic sheathed cable.....	1,779		

¹³ Coaxial cable, signal wire and cable, synthetic insulated wire of all types, portable power cables, and "other power wire and cable," were not reported separately in 1939. The values of these products are included in the \$40,826,000 shown for other insulated wire and cable, including fixture wire, automotive and aircraft wire and cable, marine wire and cable, etc.¹⁴ Includes synthetic resin enamels and combinations of enameled with other coverings.¹⁵ Having Underwriters' labels.¹⁶ Includes farm tractor, aircraft, marine, and stationary and construction machinery types.

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TABLE 7.—SELECTED MATERIALS CONSUMED, BY KIND: 1947

[The table below summarizes the consumption of selected metal shapes by manufacturers during 1947. For each shape, manufacturing establishments were required to report consumption, in quantity and cost, provided that such usage during 1947 exceeded the following amounts: for iron castings, steel castings, each of six carbon steel shapes—50 short tons; for alloy steel bars and all other alloy steel—25 short tons; for stainless steel, brass and copper wire mill shapes, copper and brass castings, aluminum mill shapes and aluminum castings—10 short tons]

[Money figures in thousands of dollars]

METAL SHAPE	Establishments consuming more than specified quantities								
	ELECTRICAL APPLIANCES INDUSTRY			INSULATED WIRE AND CABLE INDUSTRY			ENGINE ELECTRICAL EQUIPMENT INDUSTRY		
	Number	Short tons	Cost	Number	Short tons	Cost	Number	Short tons	Cost
Iron castings, rough and semifinished.....	19	10,297	\$2,684	(1)	(d)	(d)	11	18,718	\$3,972
Steel castings, rough and semifinished.....	(1)	159	36				(1)	662	264
Steel mill shapes and forms.....	n.a.	218,162	24,916	n.a.	40,416	\$6,528	n.a.	237,694	23,738
Carbon steel:									
Bars and bar shapes.....	14	3,170	420				17	88,993	8,630
Sheet and strip.....	72	204,878	21,426	8	15,039	1,952	32	94,918	9,705
Structural shapes.....	(1)	1,472	191						
Plates.....	(1)	2,726	252				(1)	40,639	3,219
Wire.....	9	2,259	205	(1)	25,377	4,576	5	2,507	277
All other mill shapes and forms.....	(1)						6	1,719	466
Alloy steel, except stainless:									
Bars and bar shapes.....	(1)	740	260				7	6,017	752
All other mill shapes and forms.....							5	2,539	387
Stainless steel.....	21	2,917	2,162				10	362	302
Copper and copper-base alloy:									
Brass and wire mill shapes and forms.....	27	3,934	3,030	(1)	143,400	88,081	39	37,783	25,378
Castings, rough and semifinished.....	5	282	193		(d)	(d)			
Aluminum:									
Aluminum mill shapes.....	40	5,426	3,061	(1)	1,570	698	(1)	178	126
Castings, rough and semifinished.....	35	6,979	6,360				10	2,130	1,994

n.a.—Not available.

^d Withheld to avoid disclosing figures for individual companies.

¹ Less than 5 establishments.